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ORIGINAL LECTURES.

ESMARCH, ANTISEPSIS, AND BACILLUS.

The Annual Address, before the Philadelphia Academy of Surgery, delivered at the Hall of the College of Physicians, January 8, 1883,

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GENTLEMEN: How does the statement, so often made in these times, that everything is practical and demonstrative, and that the days for didactic teaching and oratory are past, agree with the fact that there not merely lingers, but actually exists, an intense desire on the part of most people to hear something said by somebody, it too often seeming to be a matter of indifference whether what is said be good or bad, so that the desire is fulfilled? Does not the reason lie in the fact of the vast superiority of the sense of hearing, over every other sense, as a means of intellectual culture? Science demands demonstration, but demonstration requires explanation; pantomime alone will not do, otherwise the deaf and dumb should be our intellectual superiors. They are, however, shut off in a much greater degree than the blind from that capacity of association with their fellow-men which is so essential to high degrees of mental cultivation. We can demonstrate to deaf mutes, but we cannot do so to the blind. These say "*tell* us all about it;" the others, "let us *see* it." These will ponder with the subjective, and show that, hearing, they have understood, while with the others there is reason to believe the objectivity of objects remains without analysis, and for the most part seeing, they see not. The modern introduction of lip language promises a great compensation to these unfortunate ones. I can see no reason why a deaf mute with a healthy brain, one who simply cannot speak because he has never been able to hear, having learned the language of speech, instead of his own, which is essentially a foreign one of signs, should not become the peer of any of his fellow-men. It may be said that deaf mutes have all the requisites for cultivation in books, after they have learned to read. But reading of a high order, to one who only knows the language of signs, must be a labor indeed, and I should argue without having made practical inquiry that it would be very exceptional, and in most cases an impossibility.

In studying, then, the respective merits of the didactic and the demonstrative, the blind and the deaf give us the most striking contrasts. Great contrasts, also, teachers most sadly know, exist among those who pride themselves on the full possession of all of their senses. Dumb talkers and deaf hearers thrive in such numbers as to almost justify Carlyle's estimate of population being "mostly fools." It may be that a tacit acknowledgment of this by the wise ones of the world is the foundation of the immense advance of demonstrative teaching over the other and older method. The teacher seems to say, if I cannot *talk* a fact into your head, I can at least *show* it to you; and if with ears and eyes both you do not take it in, it is your fault and not mine! Who knows but what these proud demonstrators, who now so largely occupy the field of knowledge, may, when the concealing veil of truth is lifted, have to realize that they have been engaged in a fleeting *show;* while the dialectician, by contemplation led, is enabled to reveal that to which their work is as nothing and vanity.

And now I, who have always been a demonstrator, being forced for the first time, by the appointment of our unrelenting President, into a didactic position, must cast about for a theme with which to occupy the allotted time this evening.

Biography is justly the favored resort on such occasions, for what is more interesting and instructive than the following of the footprints of the great and learned ones of the past? Our two great leaders have already indulged us in this way. John Hunter and his pupils and Baron Larrey have been most vividly pictured to us. It is most tempting to follow the example, and I might take up Paré, or Cheselden, or Cooper, and discourse on the ligature, or lithotomy, or luxations, until my task was done. I might also go back, almost into the "night of time," and query as to what was then done for human ills, and show that medicine and the knife and fire were then, as they are now, at the command of those who had the skill, or the boldness, or the assumption to use them. But I shall choose none of these subjects, for my discourse will be devoted to a few of the occurrences of the past year, partly hackneyed and partly, I hope, fresh enough to interest you.

On the 2d of February, 1882, the distinguished Prof. Esmarch delivered a lecture at Kiel upon the "Treatment of the Wound of President Garfield." He was so kind as to send me a copy of this lecture. The high standing of the author and the lecture itself were looked upon as matters of such importance that, you will remember, they were made the subjects of a cable telegram to this country, and doubtless also to other places. A short statement of the opinions of Esmarch was given in the telegram. In his lecture the Professor states that he is led to select his subject from having noticed, through many English and American publications, that the widest difference of opinion exists among most distinguished American surgeons, both as to the wound and as to its treatment.

Short comments on five of the critics form the introduction to his paper. These, in the order named, are myself, from whom he opens the discourse with quite a lengthy quotation, from my letter published in THE MEDICAL NEWS, for Nov. 1881, which he characterizes as an attack upon antisepsis. Then follow the conclusions of Drs. Wm. A. Hammond, Marion Sims, John Ashhurst, Jr., and John T. Hodgen, taken from the celebrated and widely read article contributed by these four gentlemen to the *North American Review* for December, 1881.

In his concluding paragraph Dr. Hammond says, "it is denied that the wound was necessarily a mortal one," and that "the President did not have all the advantages of treatment which modern surgery is capable of affording." This much of that paragraph Prof. Esmarch quotes, and further on he says, "I must, upon the whole, adhere to the last proposition of Dr. Hammond, but, indeed, from an entirely contrary standpoint." He then takes the history of the case furnished by Dr. Bliss to the *Medical Record* of the 8th of October, 1881, and from it, and from the report of the autopsy, he seeks to establish his points.

I have never met Prof. Esmarch personally, but he must be a capital example of the effect of climate on character. His work has the snap of a Norseman in it, and is very different from the tedious disquisition

of many German writers. He was born at Tönningen, on the North Sea, but most of his life appears to have been spent at Kiel, on the Eastern shore—"by the wild Baltic's strand." In considering his subject, he gives a synopsis of the case from the materials at hand, and with abrupt, short, and sharp, if not always decisive, running comments, in the shape of foot-notes, he makes his thrusts. The reader who is not fond of foot-notes would miss the gist of the matter if he avoided them here. It would be interesting to know how they were managed in the lecture, as this, surely, could not have been delivered as printed; for, if so, much of its spice must have been lost.

The main point of the illustrious critic is, that *true* antiseptic treatment was not practised. The whole story is so familiar to us that I shall confine myself mostly, and therefore often abruptly, to the exact places where these pithy notes occur, and also, adopting the same style, I shall take the liberty of occasionally throwing in a note of my own, designating it with an H. The order will be a translation by me, back into English, of the parts of Esmarch's synopsis of Dr. Bliss's record, which are the especial subjects of his strictures; then Esmarch's notes; then my H's. After the record has been gone through with, only E. and H. will appear.

To begin: "The first physician who saw him (Dr. Townsend) carried his finger immediately into the wound; nevertheless, without finding the ball."

Note, "It is not stated that before this he washed and disinfected his hands."

H.: Railroad stations, as a general thing, do not keep twenty to forty per cent. solutions of carbolic acid on tap.

"The patient complained of a feeling of weight and numbness, later of pins and needles, and pain in the lower extremities."

Note, "Shock of the spinal cord."

"Dr. Bliss immediately examined the wound."

Note, "Nothing is said of antiseptic precautions."

"Then he carried the little finger of his left hand into the wound."

Note, "A dangerous operation without the spray."

"Thereupon he carried in a bent silver probe."

Note, "That it was previously satisfactorily washed and disinfected, is not stated."

H.: Clean hands and clean probes are at least as common in America as in Germany or Denmark. That "something is rotten in the State of Denmark," is a matter of common information.

"As the President was very desirous of being taken to the White House, a *temporary dressing*"—

Note, "What is that?"

H.: Why that is just what it says, a temporary dressing put on to last during transportation.

"In answer to questions, the President stated that the movement of the wagon did not cause any unpleasant feelings."

Note, "From which it is to be concluded that the spinal column was not separated."

H.: His attendants surely knew that much.

"As there was suppression of urine until six o'clock in the evening."

Note, "Urethral spasm."

H.: Better, insufficient or disturbed innervation from admitted spinal shock.

"A catheter was introduced and six ounces of clear, not bloody—"

Note, "Therefore, no injury to the kidneys."

H.: A good point in diagnosis.

"The carbolized-cotton dressing had become displaced and must be renewed."

Note, "An *antiseptic* dressing could not have been so easily displaced."

"During the night the outflow of dark blood continued, and made frequent renewals of the dressing necessary."

Note, "The dressing could not have been very thick."

H.: I find nothing about frequent renewals at this time in Dr. Bliss's report, but if they were made, how thick should the dressings have been? It appears to me that the abundant first and wet organic discharges would soon, in the hot weather especially, have become a true outward nest for infecting germs, instead of theoretical ones in the room.

Drs. Agnew and Hamilton arrived July 4th. "The temperature was 37.8° C., pulse 104, respiration 19."

Note, "Therefore the whole condition was very satisfactory. In spite of this a renewed examination was made with probes, flexible bougies, etc., in order to determine the course of the ball."

Note, "What for? According to his report, Dr. Hamilton disclaimed any probing. It is not stated whether the instruments were properly disinfected or whether other antiseptic precautions were observed."

H.: Here is a question of fact, and here is an extract from a letter of Dr. Agnew's, dated December 5, 1882. I wrote to Dr. Agnew on account of remembering what he told me on his return from Washington after his first visit there. He says: "You are right; no examination was made by the consulting surgeons at the time of their visit. They were informed that careful explorations had been made at the time of the shooting by Bliss and by Wales. Bliss admits that he committed an error on this point, writing as he did in New York and without any notes to refer to." Of course, Prof. Esmarch is excusable, as Dr. Bliss's report was his source of information. But one of his severest strictures is thus swept away, and the expectant treatment, as we will find further on, which he so ardently advocates in such cases, and with which I am in full accord, was carried out to the letter.

To proceed: "They were convinced that neither the liver, nor the kidneys, nor the intestine, nor the peritoneal sac were injured, and refrained from any operative interference."

Note, "They might have known this without this examination."

H.: As the examination was not made, they appear to have been a fairly bright set of men, with average reasoning faculties.

"On the 21st of July a pus collection was discovered in the general integument which passed below the twelfth rib, towards the erector spinæ muscle, and underneath the latissimus dorsi; and the pus, with every change of the dressings, was carefully (Dr. Bliss says gently) pressed out towards the wound of entrance (Schussöffnung)."

Note, "Stromeyer and myself (references given) have most energetically spoken of the dangers of pressing pus out of wounds, especially, or namely, if splinters of bone are within."

H.: A very important thing to protest against, but I will again refer to this further on.

August 6: "A flexible catheter was passed downwards through the wound seven inches, towards the crest of the ilium. This was *now done twice daily* in order to rinse out the pus with an irrigator (hand fountain) filled with a solution of permanganate of potash."

Note, "In any case an obsolete and ineffective disinfection method."

H.: Whether this was done too often or not, those who were in attendance were the best judges of the requirements; also they were at perfect liberty to select their disinfecting fluid, and the permanganate of potash is a good one.

"In conclusion, Dr. Bliss remarks that the most approved antiseptic dressings were used during the entire progress of the case."

Note, "That, certainly, does not amount to much. There is a great difference whether one treats a wound with antiseptic *dressings*, or whether he treats it according to *antiseptic principles*. Against these much that is bad has been manifestly done here."

H.: Here are questions of fact, and the record to appeal to. Each one will have to judge for himself, though I hope not so harshly as the Professor has done, as to whether principles were subordinate to technic in the case.

Here follows a synopsis of the autopsy, illustrated by the familiar drawing of the perforated vertebra and fractured ribs. How any surgeon can look at that drawing and reflect upon the surrounding structures, which, if not directly, were by contiguity involved, and then say, not that it is not *possible* for a man so wounded to recover, but that he *ought* to recover, through modern methods properly applied, it is hard to conceive.

Then follow the conclusions of the Holstein Professor, thus:

E.: "1. President Garfield did not receive an absolutely deadly wound. The liver was not injured; the peritoneal sac was not injured; there was no peritonitis; altogether there was no important organ injured, *with the exception* of the *vertebral column!* The injury of the vertebral bodies was not of itself mortal. Healing might have readily occurred if putrefactive ichor (verjauchung) had not set in. *In military surgery there are examples enough of recovery from similar injuries.*"

H.: Instead of giving any such examples, here follows a long foot-note about deer shooting, thus:

Note, "Every hunter knows that the stag mostly survives a peculiar shot, the so-called hohlschuss. This is a shot by which neither the viscera, nor the great bloodvessels, nor the spinal cord are injured. As the great vessels lie directly below the faces of the vertebral bodies, and the spinal cord directly above them, the ball, in this case, must go directly *through* a vertebral body itself. If the cord is wounded, the stag, on account of the paralysis of his hinder extremities, cannot take to his heels when the hunter comes to give him the final stab.

"If the descending aorta or the inferior vena cava is injured, he does not fall immediately, but very soon after the shot, on account of the great hemorrhage. The 'Hohlschuss' is considered to be a bad one by the hunters, because by it they do not secure the game. It is also of no great consequence, because no surgeon comes to the rescue with fingers and probes, which carry corrupting causes into the wound."

H.: Allow me to suggest also that neither spray nor antiseptic dressings are at the service of the poor stag. "Pity 'tis, 'tis true." This is a point for the open method. To go on:

"Equally also the game is not killed or secured when it receives a shot that only wounds the spinous processes. In this case the stag falls because the hinder extremities are paralyzed momentarily by spinal shock. When the hunter approaches, however, the stag struggles forwards for some distance like a seal, with his forelimbs, and then suddenly springs up, and on all fours he runs away and is quickly out of sight."

H.: If the deer is so soon out of sight and if also those who have received the Hohlschuss escape, how do you know whether they die or not? Are they not as likely to suffer, and to languish, and to die in their solitudes, with such injuries, as human victims do in the open day? The laborious preparers of anatomical specimens, both human and comparative, so numerous in Germany, should be able to show some specimens illustrating recoveries of the kind the Professor mentions. I believe they would be very rare from the stag.

As to man, the matter has been gone over so thoroughly by most competent authorities that it is unnecessary for me to burden you with the tedium of statistics. Museums have been ransacked and records have been searched. I have done something at it myself, and notwithstanding the Professor's assertion that there are examples enough of recoveries from such wounds as that of the President, I feel no hesitation in here challenging him to produce a single *human specimen* unquestionably proving a recovery from a PERFORATING *gunshot wound of the body of a vertebra.* This deer note also requires further criticism. A shot is spoken of by which neither the viscera, nor the *great bloodvessels*, nor the spinal cord, are wounded. What does the Professor call the splenic artery two and a half inches from its origin at the cœliac axis, where it was wounded? I call it a great bloodvessel. I have prepared and mounted many a one, and we all know what a striking idea of great vascular supply to the spleen and neighboring parts is given by specimens of it. This artery wound was enough of itself to determine a fatal result.

To go on with the conclusions. E.: "2. The putrefactive ichor (verjauchung) cannot be laid to the ball, as it appears to have carried no septic substance into the wound, for it was already encapsuled and the neighboring part of its track was obliterated, that is, healed.

"3d. Therefore the foulness, the putrefying causes of the wound, must *have been brought in from without*, and for this, different points in the treatment are to be accused!"

H.: Is it logical in the search for the causes of phenomena, to abandon obvious and all-sufficient ones, and to substitute those which are vague, unproved, and theoretical? What a blessing it is to live and learn! In 1868, in the *Pennsylvania Hospital Reports*, in a paper called a "Contribution to the History of Toxæmia," I give an account of how I was poisoned and made seriously sick, from suddenly inhaling the fumes from an outburst of ichor, that gushed forth when I plunged my knife into a huge gluteal abscess. Innocently thinking that inward causes, possibly germs, may have been at the root of the trouble, I say, "we may imagine a micro-photograph taken of the material just as it gushes forth, picturing myriads of spores rising to a certain height and then falling dead like melting snow-flakes. The hapless victim who chances to be in the first part of the stream, catches up the living material, and affords a bed for its nourishment and propagation. Who knows, but what we may some day see such a photograph? Stranger things have happened."

My hopes of ever seeing such a picture have vanished, for I find I was altogether wrong. The spores were going the other way! I am told that, without having taken antiseptic precautions, the moment I made my cut, a myriad host of cocci rushed for the wound, and that some cowardly divisions as they passed me by, sought refuge in my mouth and air-passages, and insidiously poisoned me with their foulness. The invisible contest with the main army must have been fearful and altogether without the ramparts, and without quarter, for the gluteal sortie was successful, as the parts healed kindly and there was no evidence of prisoners. Notwithstanding my enlightenment, I have still a lurking belief that it was what came out of that man, and not what went into, or tried to go into him, that defiled both him and me.

To continue, E.: "The different points in the treatment that are to be complained of are:

"1st. The immediate examination of the wound with button probes and fingers, which were probably not disinfected (without antiseptic precautions).

"2d. The repeated examinations on the third day by several of the surgeons (probably so)."

H.: We have already dealt with this point.

"3d. The entirely insufficient antiseptic treatment of the wound (deficient in the technic of dressing).

"4th. The *squeezing* out of the wound undertaken from the 21st of July on."

H.: Nowhere, my dear Esmarch, in your synopsis of the record, nor in the record itself, does the word *squeeze* occur, but you take the deliberate liberty of substituting, in your summing up, "Ausquetschen" (to squeeze), for "Ausdrücken" (to press), and Bliss says, *gentle* pressure in one place, and pressure in another. Now, if you knew our beloved Dr. Agnew as we know him, you would know that he would not allow himself to *squeeze* any kind of wound, to work harm; nor would he allow others to do it if he could prevent it. In practice and in precept, he is most earnest against roughness of any sort. Shall I tell you, though, what I know he thinks? He thinks that, for a first-class squeezer, there is nothing equal to an Esmarch bandage, and it is on account of this very squeezing property that I have often heard him utter warning caution as to its use.

E.: "5th. After this the daily probing and syringing out of the wound with unsatisfactory antiseptic fluids (obsolete disinfection methods)."

"6th. The neglect of a radical division into the pus-cavity (8th August)."

H.: From Dr. Bliss's account, it was in my opinion radical enough, and Dr. Agnew writes to me, December 27, 1882, "free incisions had been made, one *five* inches in length, opening up freely the post-peritoneal space of the lumbar region, in order to favor drainage, which was also assisted by means of drainage-tubes." What more the Professor would have I cannot imagine. He appears to find fault here for not doing enough, and later on we will find him blaming the attendants for doing too much.

After noting the metastatic inflammation of the parotid, which he says did not advance to a regular metastatic pyæmia, the Professor goes on to say that "The President did not die of pyæmia, but of a relatively small hemorrhage, after his powers had become exhausted by septic fever, by decubitus, by bronchial catarrh, and by hypostatic pneumonia. The hemorrhage followed a laceration of the splenic artery, which perhaps may have been caused by the ball, or by a splinter of bone; but probably it gradually formed later, under the influence of the ichorous degeneration acting upon a place contused by the ball, or against which a splinter of bone had been *squeezed* (*gequetschten Stelle*). Before the fatal hemorrhage, probably, a spurious aneurism had formed, which burst under the influence of the ichorous degeneration. If suppuration had not set in, the injury to the artery might not have produced any evil consequences."

H.: Why depreciate the hemorrhage by calling it relatively small? The record states that, besides some bloody fluid, the coagula which were gathered measured nearly a pint. Is it likely that a wound four-tenths of an inch long in so large an artery as the splenic would have healed spontaneously under any circumstances? Who of us here to-night, apparently in full health, would give much for his chance of life if he knew that there was suddenly thrown into his abdomen a pint of blood from an ulcerated splenic artery? Of the two, I would rather take my chance from a perforating gunshot wound of a vertebral body. Either would be enough to kill; our poor President had both conditions to contend with, and yet there are those who say he ought to have got well if he had had a fair chance.

I notice that the Professor does not say the blood was pushed out of the arteries after death by the embalmers' injection. He knows better than that!

To go on, E.: "It appears, therefore, that our colleagues on the other side of the ocean have not regarded our admonition as to the leading principle in the first treatment of gunshot wounds: 'Do no harm!' and the beautiful observations of Pirogoff, Klebs, Reyher, Bergmann, and others, upon the healing of the most serious gunshot injuries without suppuration, have made no impression upon them."

H.: That is fine! All we have to say is, that we have had a *few* gunshot wounds on this side of the water, and that we have made most beautiful observations upon them, and the outcome of those observations is that some get well and some do not.

E.: "The public, indeed, think that the ball is the most dangerous thing, and the soldier is happy when the ball which has been cut out of him is placed in his hand. The surgeon, however, should know that the ball itself in most cases does no harm. The real injury is what it has inflicted in its course, and what is superadded comes mostly from the fingers of the examiner."

H.: This is somewhat strongly put as to the last proposition, or else German fingers must be peculiar. With the other part I, and I think most of us, are in full accord, both as to practice and precept. I have written and taught in almost precisely the same words and to the same effect.

E.: "Practising American physicians seem, under the pressure of public opinion, to have assented to the proposition that much too *little* was done. But, according to my view, they did not do too little, *but much too much!*"

H.: It would be a fair logical sequence that, between these two extremes, just enough was done and no more!

Here is the climax and conclusion of this remarkable address:

E.: "If they had left the search for the ball entirely alone, and immediately after the injury treated it with *true antiseptic dressings*, the President probably might have been now alive, even as our Emperor, of whose numerous shot grains Langenbeck did not cut out a single one."

H.: Now, my dear Esmarch, is not this *ganz durchsichtig?* Is it not most uncommonly diaphanous? For one moment to compare the bird-shot peppering of the Emperor with the frightful, deadly wound of the President! Is it your regard for the "divinity" that "doth hedge a king" that makes you do this? As I write, I have before me German newspapers, and an extra of the day, containing full accounts of the attempt on the Emperor and the after-history. On the 2d of June, 1878, towards three o'clock in the afternoon, the Emperor, whilst taking a drive, was wounded by two discharges from a double-barrelled shot-gun, loaded with shot, and fired from the second-story window of house No. 18, Unter den Linden.

Many of the shot were warded off by the Emperor's helmet, of which he soon afterwards affectionately said, "How often, old helmet, hast thou done this duty for me! and now again thou hast protected my life." Nevertheless, there were wounds in the face and both arms, but none of any gravity whatever. A quarter of an hour after the outrage the Emperor took a cup of strong tea, and at half-past three Count Perponcher appeared upon the landing-place of the palace, and communicated to the assembled officers and cadets the facts that his Majesty had received three wounds from grains of shot—one upon the left temple over the eye, a second upon the cheek, and a third in the hand. He gave also to

the feverishly excited masses the comforting assurance that there was no danger to the life of the Emperor.

The royal patient kept his bed for a very short time, and on the 10th of June, 1878, the eighth day after the injury, at 9.30 o'clock in the evening, the following bulletin was issued by his medical attendants, Drs. von Lauer and von Langenbeck and Dr. Wilms:

"His Majesty the Emperor feels himself strengthened by a night's rest, and after the dressing was finished he left his bed for his arm-chair. Most of the wounds are healed. The arm, however, is still swollen, but is not so painful on being moved." The case went on without a drawback to complete recovery.

To compare this case with the President's! Full well you know, Dr. Esmarch, no one better, that if two mortals of the baser sort, wounded respectively as these two great men were, had been brought together into your hospital, that the one, after the requisite examination and dressing, and possibly after a few days' detention, would have been consigned to the care of the merest tyro in the out-ward; while the other would have claimed all of your knowledge and skill as a surgeon, and all of your sympathy as a man; and, although you may have appeared like impassive steel at his bedside, your heart would have bled at his imploring looks for that aid, which you were powerless to give, beyond mere temporary help; and some morning, coming and finding his place empty, you would have thanked God that relief had come for both of you at last.

When I said my discourse would be devoted to a few of the occurrences of the past year, I had no idea that one of them would take up so much of your time. The *great* event of the year, as important, if true, to surgery as to medicine, was the announcement that Koch, in Berlin, had discovered the origin of tubercle to be a bacillus, which he named the bacillus tuberculosis. This event also was heralded by cable and wires the world over. I had intended to give the discovery more than a passing notice, and I might dwell upon the excitement which it caused among all classes, scientific and lay, especially though in Germany.

No one has more graphically pictured the story than Dr. Formad, in his lecture before the County Medical Society, on October 18, 1882. The bacillus was discovered. The emperor saw it and fled. Virchow was driven back. We are told by an imperial order that in military hospitals phthisical patients were isolated. The community was in a ferment. Koch's conclusions are, however, not unchallenged, as the masterly labors of Formad prove.

More interesting and instructive reading than his lecture, I do not know. Formad admits the bacillus, but denies the claim for it as a cause, and right well, by experiment and reason, does he sustain his propositions.

And now there is another antagonist at hand. One whom some of us know well, Dr. H. D. Schmidt, a former close colleague of Dr. Leidy and myself, in this city, but now of New Orleans. When one sees that man, broken in health, lame, and with hands terribly crippled with rheumatism, through exposure in the field (for this was his condition on his last visit here), one is lost in wonder at his enthusiasm, and at the way in which he produces his beautiful work. He writes me, under date of October 20, 1882, in a tone of apology, for not having sent certain preparations for the Mütter Museum: "Just now I am very busy in preparing a paper on the bacillus tuberculosis of Koch, with which I have been occupied the last three months. I have made very extensive microscopic researches on this subject, during which I prepared and examined several hundred sections of tuberculous lung tissue taken from a dozen fresh cases, besides other fresh sections which I had on hand from my studies of the miliary tubercle during last fall and winter, and *I can say now that Koch's bacillus tuberculosis* appears to be nothing else but *a fat crystal* formed from the fat globules in the degenerating tubercular cells. I have found this pseudo-bacillus even in pathological neoplasms containing fattily degenerated cells. But my paper will tell you all about it." Here, then, is a man who has the temerity to deny the very existence of the bacillus which the emperor saw.

I would suggest whether it can possibly be the same thing that all of these men are looking at? Koch's and Formad's bacilli increase and multiply rapidly under nurture and cultivation. Schmidt's, if they are fat crystals (pseudo-bacilli), cannot surely do this.

And now I hear some specialist say, after the abrupt manner of Esmarch, "So *you* had intended to take up and discuss Koch's bacillus? What do you know about it?" My friend, did I say I *knew* anything about it? What do you *know?* I have a right to an opinion, have I not? I, who long ago put in a most touching appeal for maggots! Having noticed wounds healing kindly under masses of maggots, I reflected, that they were scavengers, eating only dead material, and so converting harming matter into harmless living substance. We have to get rid of them, it is true, because they will *persist* in getting into *wrong* places, and so give an infinite amount of trouble. Now are the plaguing micro-organisms of which we hear so much any more than consumers of dead material, serving (as we find them everywhere), a beneficent end, so long as they do not get into the *wrong* places? Molecular death is going on continuously in all living tissues. In the nice balance of perfect health, the results are removed so completely through the blood and lymph-channels (so beautifully described by Formad), and by other means, that there is no accumulation. When, however, disturbances arise, as inflammations, for example, from any cause, abundant *necrotic* products are the consequence, and these accumulate faster than they can be removed. Then come in the migratory micro-organisms. It is a question of food, and is consonant with what we know of the movements of hosts of higher animals, possibly also of plants, and sometimes of man himself. As these organisms get into the *wrong* places, they, accumulating with great rapidity, help to choke further and irritate what has already started on an evil course, and so they become secondary and very fruitful causes of disease. We may comprehend, from Formad's views, how scrofulous subjects with narrow lymph-channels, are more readily affected than others. *To my mind there is no positive proof as yet of the organisms being* SPECIFIC AND PRIMARY *in their operations.* I must say, if they are so, I do not comprehend how any of us are alive.

There is none the less reason to get rid of them, or to keep them out, in disease or injury. The *practice* of antisepticism does not require a theory of a fixed character to make it good, as Esmarch seems to think, nor need it be limited to one method. From the germicide sprays and liquids and the cumbersome details of the dressings of Lister, we may come to the use of simpler methods equally as effective.

It is truly astonishing how the medical, and the German medical mind especially, is impregnated with this subject. It really does seem to be a bacillary craze. I have before me as I write, the November, 1882, number of Volkman's *Klinische Vorträge*, containing an essay by Theodor Kocher, "Upon the Simplest Means of Obtaining the Healing of Wounds by Agglutination Without Drainage-tubes."

This writer discusses in a very thorough manner

the various articles used in antisepis. The merits of carbolic acid, iodoform, salicylic acid, and the chloride of zinc, are reviewed. His own purpose is to advocate the use of the subnitrate of bismuth (wismuth), which he does with great care and detail, and gives experiments and illustrative cases. It is not my intention to consider the matter here, but I hope to give this substance a trial. Kocher says that it is undisputed that a great number of wounds heal by Lister's carbolic antisepsis process, perfected by Volkman, but it is also certain that this often does not happen. "I have seen," he says, "colleagues who tenaciously hold to the spray, with all the attributes of the Lister-Volkman technique, here and there, have the most grave cases of infection, after complicated operations." Again, and here is a refinement to worry us! "As it is proved that with different forms of inflammation different micro-organisms come into action, that simple septic occurrences upon the wound and suppurations are not to be laid to the *same* coccobacteria, so it is to be inferred that by recent wounds and by already existing suppurations, the same antiseptic measures are not to be used."

What are we going to do about it? Different kinds of game, different kinds of ammunition. Buckshot for one, No. 12 for another. Before the surgeon can go to work, he must know the season, and what kind of germs are about, before he can select his germicide. The strict antiseptist is most skilled in strategy. He takes care of his base, and keeps the country behind him open. The theory must stand, and whatever mishap occurs is not due to it, but to incompetent officers, or failure in details.

It is the fashion now for writers and thinkers to express their ideas by epigrammatic generalizations, thus: Formad (agreeing with most recent pathologists)—"No inflammation, no tubercle." Koch—"No bacillus, no tubercle." I shall venture one which is much wider in its application, as it is not confined to tubercle alone, and according to the ideas I have expressed, it will meet the very great majority of cases, NO MICRONECROSIS, NO MICROMAGGOTS; *that is, food mostly in the shape of necrotic products, precedes the advent of the micro-organisms, however these may originate, whether animal or vegetable, and in disease these necrotic products first, plus the organisms second, play havoc with their environment.* I know these views will be regarded as obsolete by some, and was disinclined to express them, until I was delighted to find that Formad, and I think also Dr. Joseph Leidy—and if so, I wish no higher authority—essentially hold them. Thus, Formad says, "The presence of bacilli (so far as our present research goes) is *secondary*, and appears to *condition* the complete destruction of the tissue already diseased and infested by them, and this destruction is in direct proportion to the *quantity* of the organisms, which thus regulates the prognosis. The tubercular tissue seems to serve merely as a nidus for the growth of the bacillus."

What do I know about this, indeed? Please remember, friend specialist, I have put away my microscope for the present, and have turned dialectician. I am much further and much deeper than you! You, surface searcher, *go on* with your mucous membrane; I have reached the inner consciousness, and through it, sitting, like old Teufelsdreck, "alone with the stars," I may yet reveal a bacillus that will make you tremble.

No one can feel more relieved than I am at having passed safely through with the didactic. Now, do not despise me if I turn traitor at once, and return to my old love, the demonstrative. As soon as our President has dismissed us, the west room of the museum downstairs will be thrown open. There, among other objects of interest, you will find vertebra and vertebral bodies, and models illustrating the line of the President's wound; also photographs of it sent to me by Dr. Reyburn immediately after the autopsy. You will see splenic arteries, human and comparative. Judge whether, if wounded, a hemorrhage from one of them would be a trifle. You will also find Esmarch's portrait[1] and an Esmarch bandage—remember that this is a good thing, a very good thing; but how it can squeeze!—try it. I am sorry I have nothing to illustrate the wound of the Emperor. If it were reed-bird season, I could easily have had a boy up from the hospital, but reed-bird season is past.

Scientifically speaking, these objects are coarse compared to what is prepared for you in the east room of the library. There, under powerful miscroscopes, you will see Koch's bacillus by Formad, Schmidt's pseudo-bacillus, which I understand him to say is identical with Koch's. It does not appear to me to be so, but the special microscopists will have to settle this. You thus find that, even with them, seeing is not always believing, a point in favor of the didactic. The slides of Schmidt only arrived on Saturday evening, and have not been seen here before. You will also see live bacilli and other forms of bacteria. The microscopic exhibition will be almost entirely illustrative of the germs which are now considered to be such fruitful causes of disease, but which, as you have learned, some of us think are secondary.

Some of you of the laity may smile at scientific enthusiasm when you come to look at these minute rod-like lines, averaging, say the four-thousandth of an inch in length. But when you reflect what importance has been given to them by pathologists, and what influence they have already had, on German social life especially, you will understand the great interest taken in them. Some of the most noble and tender traits of humanity threaten to be undermined. The consumptive who has been heretofore lavishly loved and cared for, and nursed with tears and parted from with anguish, is to be isolated and shunned as a leper, if such doctrines as those of Koch prevail. Is it any wonder that some of us wish to look further before we adopt them?

NOTE.—There is authority enough for one in an address of this kind to allow the fancy some play, instead of keeping strictly down to the dry detail of science. In fact, the imagination in a right direction may be a great aid in developing scientific truth.

Tyndall has fully recognized Lucretius, and Goethe was prouder of his science than his poetry. Dr. J. Gibbons Hunt had under two microscopes at this meeting, what he called the "dance of life," and the "dance of death." Under one glass were swarms of bacteria (bacillus, and other varieties), fairly seething with life. Under the other were inorganic particles, which had been kept sealed up for two years, and yet they were in very active movement. A curious observation made by Dr. Hunt was, that these atoms were getting smaller and smaller as time went on. Whenever I see this life movement, and death in life, I think of the spirit lines in Faust. Goethe threw science and poetry into the same crucible, and subjecting it to the heat of his imagination, he poured out immortal ingots:

> In the sea of life, and the storm of deeds
> To and fro I rave,
> Entwine in commotion
> Birth and the grave.
> An eternal ocean,
> Webbed fabric of change,
> Life's glowing range.
> So on time's humming loom the warp I receive,
> And the living garments of Godhead I weave.

[1] Ueber Land und Meer, zweiten Heftes, 1883, No. 4.

ORIGINAL ARTICLES.

OPTICO-CILIARY NEUROTOMY, UNDER THE ANÆSTHETIC INFLUENCE OF THE BROMIDE OF ETHYL,

IN WHICH ETHYLIZATION AND OPERATION DID NOT OCCUPY MORE THAN TWO MINUTES.

BY JULIAN J. CHISOLM, M.D.,
PROFESSOR OF EYE AND EAR SURGERY IN THE UNIVERSITY OF MARYLAND, BALTIMORE.

FOR many months I have been using the bromide of ethyl daily for all operations which I could speedily complete, and, having experimented with this new agent over three hundred times in the past year, I am beginning to feel that I know how to use it and what to expect from it. I have found that its action is so very evanescent that it can never take the place of chloroform or sulphuric ether for any surgical operation which requires some time for its performance; but for all quick work, which can be done in one or two minutes, the use of this anæsthetic agent leaves nothing to be desired. For this purpose it is very far superior to any other known anæsthetic. As the result of my every-day experience—for I use this agent now in every case in which pain enters as a factor—a drachm of the bromide of ethyl, when properly used, will put any patient into deep narcosis in less than a minute by the watch. Some of my patients have been narcotized fully in twenty-two seconds. This deep anæsthetic sleep will not last more than from one to two minutes. From this narcosis the patient awakes suddenly, as if from ordinary sleep, with brain as clear as before the inhalation, and with neither nausea, headache, nor heaviness of any kind. I find the use of this anæsthetic a great saving of time in my office surgical practice, and have often had patients ethylized, operated upon, restored to consciousness, and leaving my office, feeling perfectly well, within ten minutes from the time they entered the office door.

These really magical effects must be obtained from the first inhalation, and what I will call primary anæsthesia. Should the operation be protracted and a second, and even a third dose of the bromide of ethyl be inhaled, then I find nausea, vomiting, and heaviness in all respects, as if chloroform or ether had been used. Under this repetition the bromide of ethyl loses all of its advantages. To use it successfully and take advantage of this evanescent narcosis, one must be methodical and have every preparation for an operation made in advance. Should the surgeon have to seek instruments, even from a contiguous table, he may find the patient wide awake on his return. The report of the following case is constantly repeated in my daily experience with the beautiful working of this wonderful agent.

Mr. C., aged 55, consulted me with a letter from his family physician, who lives 200 miles from Baltimore. For five months he has from time to time suffered fearfully with his head and his left eye, the sight of which he has entirely lost, no appreciation of light even remaining. From the severity of his suffering often with nausea, the case was called a cerebral lesion, and the most serious results feared. I found the case one of acute glaucoma not recognized, and with all of the distressing symptoms secondary to the disease in the eye. Had an iridectomy been performed five months since, possibly the sight would have been saved and all of the suffering prevented. Now either the eyeball had to be sacrificed to end the frequent attacks of pain, or a division of the eye nerves made as they enter the back of the eyeball. This latter operation was recommended to him and he accepted it.

The patient was put on the table with the intent of being chloroformed, but thinking that I could manipulate rapidly enough to give him the benefit of the bromide narcosis, I determined upon the use of this anæsthetic, which I had just administered to a lady for the removal of a tarsal cyst.

The instruments necessary for the operation were all placed on the table in the order which they were to be used. The patient was told to take full breath when the inhaler was placed over his face, and was made to practise full inspiration in advance. A towel, between the folds of which paper had been put, was made up into a small nearly air-tight cone. Into this was poured about a drachm of the bromide of ethyl and immediately inverted over the nose and mouth of the patient. Notwithstanding the stifling sensation from this saturated atmosphere of ethyl vapor, he commenced full inspirations. By the time he had taken the eighth inspiration I found his conjunctiva insensible to reflex action. He had not been inhaling the ethyl more than thirty seconds when deep narcosis was fully established.

The operation was at once commenced. The lids having been separated by the stop-wire speculum, an incision was made in the conjunctiva on a line with the lower border of the inner rectus muscle, extending from the edge of the cornea to the caruncula. A second clip with the scissors divided the fascia and made a free opening between the inner and lower recti muscles. Into this opening the heavy curved scissors was introduced. Using it as a probe, the resisting optic nerve was soon found. Drawing outward the point of the scissors, the blades were widely opened, the optic and all contiguous ciliary nerves were caught between them and severed. A second opening and closing of the scissors, then again using it as an explorer, its unrestrained movements in the muscular cone behind the eye showed that all the structures entering the back of the eye-ball including ciliary nerve, arteries, and veins, had been divided. With the withdrawal of the scissors blood welled up from the wound in the conjunctiva. The speculum was immediately removed, a firm cotton compress applied and tightly secured by a bandage, and the operation was completed. It took much less time to manipulate the instruments than it has taken me to describe the process. From the beginning of the ethylization to the tying-up of the eye the whole operation had not occupied a minute and a half. During this period the patient had been sleeping undisturbed, with a strong pulse, quiet respiration,

and a good color of face. I had hardly laid down his head, after securing the compress, when he awoke, and was very much surprised to find his head bandaged. He got off from the table at once and within three minutes from the time that the ethylization was commenced he was walking with a firm tread, unassisted, from the operating-room of the hospital to the contiguous ward, from which he seemed to have just come out.

To ethylize efficiently, a saturated vapor must be used, and the inhaler *must not be taken from the patient's face once the apparatus has been put over the nose and mouth.* Hold it down firmly for a very few inspirations, and your patient will be in condition to have any painful manipulation carried out.

In twenty-two seconds and with six inspirations I have established deep narcosis.

In no one case of the three hundred has it required more than 60 seconds.

In no case did deep narcosis from a primary inhalation exceed two minutes in duration.

In the midst of a large surgical practice, as a specialist in eye diseases, I find constant daily use for the *deep* and *very evanescent* narcosis of the bromide of ethyl. I use it for the passing of nasal probes, splitting of the canaliculi, scraping out the contents of tarsal cysts, opening lachyrmal abscesses, cutting defective muscles in squint, removing the elliptical piece of skin of the lid in ptosis or entropion, performing iridectomies for glaucoma, or for the making of artificial pupils, and, as in the case just reported, for optico-ciliary neurotomy.

It needs confidence in the safety of the anæsthetic to push it in its concentrated form; and I am convinced that in no other way can the best effects of a primary anæsthetic be produced.

It also requires quick movements on the part of the surgeon to complete the operation before the narcosis passes off. I have frequently performed the operation of squint before the medical class at the University of Maryland clinic in less than sixty seconds, this period including the whole time occupied from the beginning of the ethylization to the completion of the tenotomy. In all of the special operations which I have enumerated, the operative procedure must have been completed within two minutes to have protected the patient from all knowledge of what had been done, so that he should feel nothing of the painful manipulation.

THE MICROCOCCUS OF GONORRHŒAL PUS—INFECTIVE VIRULENCE NOT DUE TO THE PRESENCE OF THIS PARASITIC MICRO-ORGANISM.

BY GEO. M. STERNBERG, M.D.,
SURGEON, U. S. A.

(*Concluded from p. 70.*)

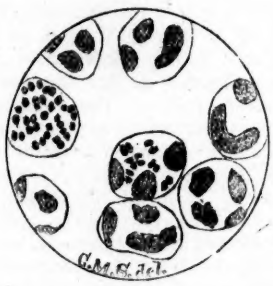
REMARKS UPON MORPHOLOGY, DISTRIBUTION, ETC.

THE method which I have found most satisfactory and convenient for demonstrating the presence of micro-organisms in blood, pus, or culture-fluids, is the following. A small quantity of material is spread out upon the surface of a perfectly clean glass cover, so as to form a uniform and extremely thin layer; this may be conveniently done with the end of a clean glass slide. This is allowed to dry, spontaneously or by the aid of gentle heat, and is then stained with one of the aniline colors. Methyl violet is the staining reagent which I most frequently employ; a very good solution for this purpose is the common violet ink, for sale at every stationer's.

A drop of this, applied to the thin glass cover, will stain the micro-organisms attached to it in a very brief time. A few seconds will usually be sufficient. The staining fluid is then quickly washed away in distilled water, and the specimen is ready for examination under the microscope.

A little gonorrhœal pus, taken from the meatus urinarius of a recent case, treated in this way presents the appearence shown in Figure 1. The am-

FIG. 1.



plification in this and in the other figures illustrating the present paper, is one thousand diameters.

The pus corpuscles adherent to the thin glass cover are flattened, and present a more or less irregular outline, as the result of the manipulation—spreading and drying—to which they have been subjected. The nuclei—so called—are deeply stained, and appear as violet-colored masses, often elongated, and presenting the aspect of a protoplasmic mass undergoing division.

That these masses are composed of living protoplasm, and the unstained portions of the pus corpuscles of "formed material" (Beale), seems probable from the fact that they are stained by carmine and the aniline colors. But it is difficult to accept the statement of the author named, that "The white-blood corpuscle is one thing; the pus corpuscle a very different thing,"[1] after having examined a specimen of pus, and a drop of blood from the finger, by the method above described. The red corpuscles lose their color, and can scarcely be seen after being subjected to this treatment; but the white corpuscles become conspicuous on account of their deeply stained nuclei, and resemble exactly pus corpuscles treated in the same manner.

In addition to the stained nuclei, a certain number of the pus corpuscles are seen to contain small spherical or slightly oval bodies, stained even more

[1] The Microscope in Medicine. 4th ed. J. & A. Churchhill London, p. 304.

deeply than the nuclei, grouped in pairs, in fours, and, rarely, in chains of three or four. A majority of the pus corpuscles are free from these parasitic micrococci; some contain them in small numbers as in the centre of the field in Fig. 1; and occasionally a corpuscle is completely filled with them, as shown on the left of the same figure.

A little pus containing these micrococci introduced at the moment of its escape from the meatus into a flask containing a suitable culture-fluid, sterilized, and subsequently placed in the culture-oven for twenty-four hours, or less, at 100° Fahrenheit, causes this fluid, which was previously transparent, to assume a milky appearance. Microscopical examination shows that this is due to the presence of micrococci, joined mostly in pairs, as shown in Fig. 2, which pervade the fluid to such an extent that the smallest drop contains a multitude of them.

FIG. 2.

The fact that they are joined in pairs and that they are found throughout the culture-fluid, shows that they are in active growth and are multiplying rapidly by spontaneous fission.

Later, when they have exhausted the material in the limited quantity of culture-fluid required for their nutrition, their active life ceases and they sink to the bottom of the flask, where they are seen *en masse* as a white deposit, while the supernatant fluid is again transparent. The same phenomena occur when, instead of pus containing *Micrococcus ureæ*, we use a drop of blood from a septicæmic rabbit, just dead, to inoculate our culture-fluid. But in the latter case, instead of assuming a milky appearance during the active growth of the septic micrococcus, which now pervades our culture-fluid, we have an *opalescence* sufficiently distinct, but presenting to the eye a recognizable difference when compared with the other. This difference doubtless depends upon the fact that the septic micrococcus has more nearly the same refractive index as the culture-fluid in which it is contained, or, in other words, is more transparent than *Micrococcus ureæ*.

A microscopical examination shows very decided morphological differences in the two organisms, which, being constant, furnish specific characters as definite as are presented by many plants much higher in the scale. The septic micrococcus, as it appears when in active growth in a culture-fluid, is seen in Fig. 3.

It is impossible in a woodcut to represent the aureola of transparent material which is a marked character of this micrococcus. This is well shown in the photo-micrograph illustrating my paper on septicæmia (*loc. cit.*) This aureola is more pronounced in the blood, and in cultures made in blood-serum than in those in *rabbit-bouillon*, which is the fluid in which I have commonly cultivated this organism.

FIG. 3.

The most important distinguishing character of the two species of *micrococcus* under consideration is found in the fact that one—the septic—divides in one direction only, thus forming a linear series of two or more oval elements attached to each other in the direction of their long diameter; while the other commonly divides in two directions, the elements being arranged in pairs, as seen in Fig. 2, or in groups of four, as shown in Figs. 1 and 5, resulting from the transverse division of each of the oval elements, arranged side by side, constituting a primary pair.

These micrococci are not so easily distinguished, the one from the other, when, having exhausted the nutritive material necessary for their active development, they sink to the bottom of the culture-flask.

Under these circumstances, microscopical examination commonly shows little groups of spherical bodies, having about the same dimensions, and which resemble each other so closely that, as in the case of the seeds of higher plants (*e. g.*, turnip and cabbage), an expert might easily be at fault in attempting to distinguish one from the other. But by the experiment of planting in proper soil, the fact that essential differences exist is readily established in both cases. And, as in the higher plants, it may be shown that, *after the material required for the development of one micrococcus has been exhausted in a certain quantity of culture-fluid, the other species will develop abundantly in the same fluid upon the introduction of seed*-micrococci. This fact I have recently demonstrated experimentally.

My observations show that the microscopic plants under consideration *vary considerably as to size in the same culture-fluid, and in different media present marked differences in this respect*, due to nature and amount of pabulum, temperature, etc., in short, to conditions in the environment, and favorable or otherwise to the growth of the plant.

These differences, when we consider the comparative size, are as well marked as in higher plants, and give ample scope for the development of varieties and species, under the operation of the laws of "natural selection."

In Figs. 4 and 5, this difference in size is very apparent. In Fig. 3 we have *Micrococcus ureæ*, from urine which has undergone alkaline fermentation; and in Fig. 4, the same organism derived from gonorrhœal pus (third culture).

A mere inspection of these figures might lead to

the conviction that we have here two different micro-organisms; but extended observations and the experiments already detailed, have convinced me that such is not the case, and that, within certain limits, differences in size cannot be accepted as specific characters among the micrococci, any more than in the case of turnips and cabbages.

FIG. 4.

FIG. 5.

By the use of high powers and staining reagents, these differences become very apparent, and micrococci from the same source and in the same field of view may differ in diameter as much as one-half. Measurements, therefore, have only a comparative value and it is easy to understand how Pasteur has given the diameter of *M. ureæ* as 1.5 μ, while Cohn has placed it at 1.2 to 2 μ.[1]

The limits of variation are even wider than stated by the writer last named. In Fig. 6 we have what

FIG. 6.

I believe to be the same micrococcus from a different source, viz., from a culture in acid malt-extract inoculated with human saliva.

This micrococcus is found very constantly in the buccal secretions, where it is often seen in groups attached to or parasitic within the shed epithelial cells. I have also frequently observed it in the sputa of tuberculous patients, and, indeed, my studies lead me to believe that it is one of the most abundant and widely distributed of micro-organisms. That it does not, under ordinary circumstances, multiply in the blood or tissues of a living animal, and consequently is not a pathogenetic species is shown by the experiments already recorded, and by the fact that when human saliva containing it, as well as many other micro-organisms, is injected beneath the skin of a rabbit, it is not found associated with the septic micrococcus in the blood of the animal examined immediately after death. This experiment, therefore, affords a ready means of obtaining a pure culture of the septic micrococcus, while from gonorrhœal pus we may obtain an unadulterated stock of *Micrococcus ureæ*, the associated micro-organisms commonly found in normal saliva, or upon the mucous membrane of the healthy urethra, being excluded in one case by cultivation in the body of a living animal, and in the other by some peculiarity of the pus which favors the development of this particular organism.

The photo-micrograph from which Fig. 6 is drawn was used to illustrate my paper upon "Bacterial Organisms Commonly Found upon Exposed Mucous Surfaces," etc. (*loc. cit.*), and I then described it under the generic name of "*sarcina*," with an interrogation point as to the species. This determination was made in accordance with the definition given in Magnew's work ("The Bacteria," *loc. cit.*), which is as follows: "The *sarcina* can be considered as bacteria in which the division occurs by two perpendicular partitions, in such manner that multiplication takes place in two directions."

I have already stated that this mode of division occurs in the micrococcus of gonorrhœal pus, which I have shown to be identical with *M. ureæ* Cohn. This organism may also multiply by division in one direction, only so as to form chaplets of five or six elements. It is evident then that the character referred to—division in two directions—does not belong exclusively to *sarcina*, or that Cohn was mistaken in referring the organism in question to *micrococcus*, to which genus he gives the following characters:

"Cells colorless, or scarcely colored, very small, globular or oval, forming by transverse division filaments of two or several articles, in form of chaplet, or united in cellular families, or in gelatinous masses, all deprived of movement."

INFLUENCE OF TEMPERATURE, ETC.

As the result of a considerable number of experiments I have fixed the thermal death-point of these two species of *micrococcus* at 140° Fahr., the time of exposure being ten minutes. A lower temperature and longer exposure is, however, destructive of vitality. Thus *M. ureæ* failed to multiply in a sterlized culture-fluid after being exposed to a temperature of 130° for thirty minutes in one experiment, and to the same temperature for fifteen minutes in a second. But both species survived a temperature of 130° for ten minutes (experiment several times repeated, with the same result).

These results correspond very nearly with those obtained by other observers who have experimented with different micro-organisms *provided these were in an active growing condition, and no spores were present.*

Thus Cohn found that *Bacillus nuptilis* multiplies freely at 45° to 50° C. (113° to 122° Fah.), while at a temperature of 50° to 55° all reproduction and development cease, and the filaments are killed.[1]

Chauveau, in a recent communication to the French Academy upon "Attenuation of Virus by Heat (method of Toussaint)," says that nine or ten minutes' exposure to a temperature of 54° C. (129.2° Fah.) is sufficient to kill completely the bacilli in anthrax blood.[2]

[1] The Bacteria. Little, Brown & Co., Boston, 1880, p. 75.

[1] The Bacteria, *loc. cit.*

[2] C. R. Ac. des Sciences, June 26, 1882, t. xciv. p. 1694.

Pasteur, as the result of numerous experiments upon "diseased ferments"—bacterial organisms—which injure the quality of beer, found that "alcoholic ferments heated in beer can endure a temperature of 55° C. (131° F.) without losing the power of germination; but the action is rendered somewhat slower and more difficult. Diseased ferments, however, existing in the same medium, perish at this temperature, as they do in the case of wine."[1]

The author last named has shown that the reaction of the fluid in which micro-organisms are contained influences greatly the thermal death-point of these organisms, and that this is considerably less in an acid than in an alkaline medium.

From 98° to 100° Fah. is an extremely favorable temperature for the active growth of both of the species of *micrococcus* which are under special consideration in the present paper. The limits above and below this point at which active growth is possible I have not found time to determine, but my observations lead me to believe that the septic micrococcus is a more delicate plant than the other, and that comparatively slight variations as regards temperature and composition of nutritive medium may arrest its development. My efforts to cultivate this micrococcus for successive generations in beef tea have not been successful, while a *bouillon* made from the flesh of the rabbit furnishes a nutritive fluid in which it multiplies abundantly. I first resorted to the use of this culture-fluid upon a hint furnished by Pasteur in the report of his experiments relating to the etiology of fowl cholera. A *bouillon* made from the flesh of fowls was found to be the most favorable medium in which to cultivate the micrococcus peculiar to this disease. This sensitiveness as to the temperature and composition of the nutritive media in which they are placed seems to be a common characteristic of pathogenetic micro-organisms, and, doubtless, is the main reason for the marked differences as regards susceptibility to their pathogenetic action observed among animals of different species.

The same phenomenon is a matter of common observation among the parasitic fungi which infest different plants, producing the diseases known as smut, rust, mildew, etc. We may even have a marked difference as regards susceptibility to the attacks of a certain fungus among varieties produced by cultivation, which originated from the same stock.

In the case of the septic micrococcus this sensitiveness as to composition of medium has, nevertheless, rather wide limits, for I have been able to cultivate it both in acid and in alkaline *bouillon* (from rabbit), and also in acid urine.

Micrococcus ureæ seems to be a hardy plant which thrives in a variety of organic liquids, and is not very sensitive as regards temperature or the presence of various salts in considerable quantity, which, *à priori*, might have been supposed to be prejudicial to its development. I have found, however, that a temperature of 60° Fah. is not sufficient to promote its active growth, and that sterilized urine to which a culture-fluid containing this micrococcus has been added, remains acid and transparent for a considerable time at this temperature.

The writer has for some time past been engaged in an experimental study of the action of various germicides upon these micrococci and upon other micro-organisms, but this is an investigation involving a large amount of labor, and some time will be required for its completion.

In conclusion I beg leave to call the attention of any who may be inclined to under-estimate the value of studies of this nature to the fact that, aside from questions of professional interest relating to the *role* of micro-organisms in the etiology of infectious diseases, and the best methods of combating pathogenetic bacteria within or without the living body, biological problems of great interest are best approached by studying the vital (chemical?) reactions of these extremely minute unicellular organisms, which offer the simplest possible conditions for such studies, and which may be manipulated by the biologist by modern scientific methods with as much certainty as regards definite and constant results, the conditions being the same, as is possible for the chemist in his operations with non-living material.

Note.—Since the above was written, I have stumbled upon the following in *The Medical Record*, of Sept. 23, p. 359.

"*The Gonococcus*—Neisser in Breslau, who in 1879 published the discovery of a micrococcus which was to be found in every case of specific blennorrhœa, either of urethra or of eye, but nowhere else, has recently recorded his conviction that this "gonococcus," as he calls it, is the specific agent in producing the disease; and quotes Aufrecht, Ehrlich, and Gaffkey, the opthalmologists Leber, Sattler, and Hirschberg in support of his statements. But until recently the *experimentum crucis*—successful inoculation of the micrococci—had never been performed from the simple fact that animals are not susceptible to the gonorrhœal contagion, and human subjects have always preferred to acquire theirs in another way. Recently, however, Bokai, in Pesth, was so fortunate as to find six philanthropic students who placed their urethras at the disposal of science. With the 'gonococci' which Bokai had cultivated artificially from gonorrhœal discharge, the six were inoculated; and three had the satisfaction of exhibiting a week later a classical gonorrhœa. For one familiar with natural history of medical students, the experiment would have been far more convincing if the dauntless three had been kept in solitary confinement for a week before and after the inoculation."—*W. T. Belfield, in Chicago Medical Journal and Examiner.*

POST-SCRIPTUM.—*Experiment No. 15* (Oct. 5, 1882): A pure culture of the micrococcus from gonorrhœal pus (the thirtieth culture (?) or above) was introduced into the urethræ of two healthy men by means of pledgets of cotton wool, soaked in the fluid, which were left *in situ* for fifteen mintes.

Result entirely negative.

[1] Studies on Fermentation. Macmillan & Co., London, 1879, p. 20.

Univ of M

MEDICAL PROGRESS.

BACTERIA AND THEIR PRESENCE IN SYPHILITIC SECRETIONS.—DR. MORISON, of Baltimore, who is at present working in Prof. Neumann's laboratory in Vienna, has published in the January number of the *Maryland Medical Journal* an account of the pathogenetic organisms found in the lesions of syphilis and of the non-specific venereal ulcers. The organisms supposed to be specific for syphilis were found in sections of the hard chancre, and in numerous syphilitic skin affections, always at the seat of disease and never in the general blood circulation; in this they agree with the bacilli of tuberculosis and of lepra. They are only visible when stained, and the method of staining is rather complicated; but doubtless this method will be so modified in the course of time as to be much simpler, as Koch's original method for staining the bacillus tuberculosis was subsequently modified by Ehrlich. The bacilli described by Dr. M., are short cylindrical rods. In the lithograph we notice that some of them are slightly bent, and have in places the appearance of lying together in pairs; in point of size we should say, judging from the plate, drawn under a power of × 850, that they are somewhat smaller than tubercle bacilli. The bacilli found in non-specific ulcers (chancroids) are longer than the syphilitic, are extremely thin and in the plate represented as curved; from which we would suppose that they belong rather to the group of spirochæte, and not to the true bacilli. We must disagree with the author when he says that they closely resemble the bacillus anthracis. The number of germs discovered by various observers in syphilis are many, most of them being found in the blood as well as at the seat of the lesion. No special method of staining was used to demonstrate them and subsequent investigation failed to confirm them. By this last discovery of Morison's, we see that only by the employment of the most complicated methods of staining, and the use of the now indispensable Abbey's illuminator and oil immersion glasses, can they be seen. At best, however, we fear that, although the bacilli may be cultivated with success, strict proof of their causal connection with syphilis will always be wanting, owing to the impossibility of infecting lower animals with the disease. The experiments which the author mentions —those of Martineau and Hamonic on young pigs—are so utterly at variance with former experiments, that they must be confirmed. We can only hope that this latest bacillus in the field will not share the same fate at the hands of the great New Orleans microspopists as did the bacillus lepræ and b. tuberculosis.

ELONGATION OF NERVES.—M. TRÉLAT, at the meeting of the Société de Chirurgie held December 13th, read a report on a work of M. Badal, of Bordeaux, on this subject. Recently M. Badal has stretched the external nasal nerve in three cases of circum-orbital neuralgia, and in all three cases a cure resulted. The operation is very readily performed by making an incision near the angle of the eye, and exposing the nerve between the tendon of the orbicularis and the great oblique muscle.—*Gaz. Méd. de Paris*, December 23, 1882.

SIMPLE METHOD FOR DETECTING TUBERCLE-BACILLI IN SPUTA.—The following plan is followed in the pathological laboratory of PROF. RINDFLEISCH, in Würzburg. A portion of the sputum is pressed between two cover-glasses, which are then separated and dried in the air. A staining fluid is prepared according to Ehrlich's formula; the cover slip is then passed three times rapidly through the flame of a spirit-lamp, the sputa being on the upper side, and then floated in the staining fluid, which is contained in a watch glass, and the latter held over the flame until the fluid commences to vaporize. The cover-slip is then removed, washed in a stream of water, and laid in absolute alcohol which has been slightly acidulated with nitric acid, when the color will be removed in about ten seconds. The slip is then taken out of the alcohol, again washed in water, dried, and mounted in balsam.—*Wiener Med. Presse*, December 24, 1882.

JEQUIRITI IN THE TREATMENT OF GRANULATION OF THE CONJUNCTIVA.—At the meeting of the Société de Chirurgie held December 13th, M. TERRIER read a report on a memoir of M. José Cardosa, of Rio Janeiro, on the employment of this drug. The jequiriti is a leguminose plant; an infusion made of the seeds and employed as a lotion to the conjunctiva in cases of granulations, sets up an acute inflammation, and may, in large doses, even cause severe accidents. M. de Wecker has employed the preparation with satisfactory results, while in the only case in which M. Terrier employed it an intense purulent conjunctivitis was set up, which was cured without the granulations undergoing the least improvement. So while in certain cases it may be used with success, it should always be employed with caution. M. Desprès maintained that the only justifiable treatment of this disease was excision of the granulations when chronic, while, when inflammatory, they may be cured by cauterization with sulphate of zinc or nitrate of silver.—*Gaz. Méd. de Paris*, December 23, 1882

DISLOCATION OF THE LIVER.—At a recent meeting of the Society of German Physicians in Prague, PROF. PRIBRAM reported a case in which, on account of a pyopneumothorax of the right side, the diaphragm and liver were displaced downwards. The liver had entirely left its normal situation in the right hypochondrium, and was so twisted that, while the left lobe was only slightly displaced downwards, the remainder of the liver lay with its long axis vertical, and its normally inferior surface looking to the left. As a consequence of this dislocation, the transverse colon was bent on itself, and displaced downwards nearly as far as the symphyses. This condition had been recognized during life, and caused a certain amount of obstruction during life, particularly to the escape of blood from hemorrhage from a large tubercular ulcer in the duodenum.—*Wiener Med. Presse*, December 3, 1882.

TREATMENT OF HYDROCELE.—The following is the treatment of hydrocele employed by DR. CATTANEO in the hospitals at Pavia:

1. Puncture of the hydrocele with a capillary trocar of an aspirator, and evacuation of the fluid.
2. Injection of a solution of hydrate of chloral in quantity proportionate to the volume of the hydrocele and age of the patient: one to two grms. of chloral for children, four grams. for adults, and occasionally more in old men. The solution is made by dissolving equal parts of chloral in cold distilled water.
3. Cold applications to overcome the pain produced by the injection.
4. The injection is repeated if the absorption occurs too slowly.

The patients are kept in bed during this treatment and wear a suspensory bandage for some time afterwards. It is claimed by Dr. Lampagnani, who reports this treatment, that the effusion has not returned in any one of seventeen cases so operated on, nor have there been any complications in any case.—*Journ. de Méd. de Paris*, December 9, 1882.

THE MEDICAL NEWS.

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SATURDAY, JANUARY 27, 1883.

NATIONAL PUBLIC HEALTH LEGISLATION.

DURING the present session of Congress but three bills have been introduced which have any special relation to sanitary matters. These are: 1, a bill introduced by Mr. Hardenbergh in the House, Dec. 19 (H. R. 7,085), "To prevent the importation of adulterated teas;" 2, a bill introduced in the Senate by Mr. Harris (S. 2,259), "To repeal the tenth section of the Act approved June second, eighteen hundred and seventy-nine," etc.; and, 3, a bill introduced in the Senate by Mr. Conger (S. 2,284), and in the House by Mr. Rich (H. R. 7,121), "To provide for the sanitary inspection of immigrants."

We shall probably have occasion to refer to Mr. Hardenbergh's bill hereafter, in speaking of adulteration of food and drugs legislation; at present we shall only consider the bills of Senators Harris and Conger. The bill of Senator Harris repeals the tenth section of the Quarantine Act of June 2, 1879, which reads as follows, "Sec. 10. This Act shall not continue in force for a longer period than four years from the date of its approval;" and also repeals the clause of the appropriation bill of last year which restricted the operations of the Board to cholera, yellow fever, and smallpox. It also provides that, of the unexpended balance remaining to the credit of appropriations made for the National Board of Health, $124,000 shall be available for the use of the Board during the next fiscal year, and that an additional sum of $100,000 from the unexpended balance of moneys to be used only in cases of epidemic shall in like manner be available for the same purpose during the coming year.

Senator Conger's bill provides for an appropriation of $25,000 "To enable the National Board of Health to coöperate with State and local boards of health, and local quarantines; and to continue during the remainder of the current fiscal year the sanitary inspection of immigrants, for the purpose of preventing the introduction of smallpox and other contagious diseases into the United States, and their spread from one State to another." It will be seen that this last bill simply provides funds to carry on the inspection work until the 30th of June, the appropriation made last year being insufficient for this purpose. So far as we can learn, there is little probability of the passage of either of these bills in a separate form by the present Congress, owing to the fact that this is the short session, and that there is a vast amount of legislation pending in which members of Congress are much more actively interested than they are in health matters. It is, however, possible, that the substance of one or both of these bills may be incorporated as a clause in the appropriation bill, although the hostility of the chairman and other members of the House committee of appropriations to the National Board is such, that any such clause must probably be put in as an amendment, in the face of their opposition.

Since the publication of the editorial on the National Board of Health in our issue for Nov. 11, 1882, page 546, we have received an unofficial letter from Dr. Hamilton, Surgeon-General of the Marine-Hospital Service, in which he expresses a general concurrence with our views as to the essential function of a national health organization, and incloses the following extract from a communication made by him to a member of the Public Health Committee of the House, dated March 6, 1882:

"It may be asked what there would be left for the board of health to do [after the loss of the national quarantine]? In answer, it is only necessary to point out the scores of questions yet undecided as to the causation and prevention of diseases and epidemics, as well as the consideration of the different problems connected with public and domestic hygiene about which a board of health might be reasonably supposed to concern itself. The dignity and usefulness of the Smithsonian Institution have never yet been impaired by the fact of its complete severance from executive work, and I am sure that the board of health would grow in popular favor and largely increase its usefulness by a slight change in its constitution, a more proper direction of its work, and its complete disconnection with executive work for which it has evidently neither adaptability nor facilities."

In his letter to this journal, Dr. Hamilton still further defines his position in the following words:

"I have and shall continue to oppose the transfer of sick sailors to the National Board under the guise of a national quarantine, but I do not oppose the Board or its legitimate work. The work of this service is the health and hygienic interests of sailors and boatmen, but if we are to have a *national* quarantine at all, I claim that the Treasury Department, which not only has *medical* officers, but the customs officers and coast guard at its disposal as well, is the proper department. . . . Now it is more reasonable that the commercial interests shall be consulted in the disposition of this matter than that a few office-holding 'sanitarians' should disturb the ordinary channels of business for the sake of bestowing a few offices upon their favorites. Now if offices are to be created *de novo*, we do not concede that the National Board of Health has any better facilities for procuring them, or that their system of appointment affords any better guarantee that they shall be competent than the method now pursued by the other branches of the public medical service; on the contrary, while the Board does not examine its appointees, the Army, Navy, and Marine-Hospital Service require theirs to pass a rigid professional examination."

We have quoted thus fully from Dr. Hamilton, because we desire to have his views fully and fairly represented. It is much to be regretted that there is a certain degree of hostility existing between the Marine-Hospital Service and the National Board, and the more so since this hostility appears to us to be almost entirely groundless. We cannot understand, on the one hand, why the National Board should object to the transfer of all quarantine executive work to the Treasury Department, nor, on the other hand, how it can in any way interfere with the work of the Marine-Hospital Service to have the work of aiding State and local boards in quarantine work performed through the National Board, as at present.

Dr. Hamilton is rather unjust in his sneer at sanitarians and their motives, as we think he would admit upon reflection, but it must be remembered that his letter was written just after the meeting of the American Public Health Association, where some of the sanitarians were disposed to speak harshly of his services, and it will be observed that he disclaims all hostility to the Board itself. Since our last editorial on the National Board, Dr. Folsom and Mr. Phillips, the Solicitor-General, have withdrawn from it, and some criticism has been made of the remaining members, in that they have not also resigned, and have appealed to physicians and sanitarians to influence Congress in their behalf.

It seems to us, however, that the question as to propriety of resignation is purely a matter of individual view as to what is becoming and to the best interests of the Board under the circumstances; and there is plenty to be said on both sides. We can see no impropriety in their having appealed to physicians and sanitarians; there is, in fact, no other class to whom they can properly appeal for a competent judgment as to whether they have done well or ill. The question must be settled in some way very soon, for if Congress at its present session does nothing, the present Quarantine Act lapses on the second of June next, and the Board remains under the constituting act alone. Whether the lapsing of the present quarantine act revives the one which preceded and was annulled by it, and which put the matter in charge of the Marine-Hospital Service, is a legal question, not yet decided; but probably it does not.

As indicated in our previous editorial, this question of quarantine, and who is to act as almoner for the United States with regard to it, seem to us questions of secondary importance as compared with the question whether we are to have a National Health Commission, to carry out investigations into the etiology of disease, and furnish authoritative and reliable advice and information when they are required. It is probably impossible during the present session of Congress to obtain legislation which will put the National Board of Health upon a proper footing, but, at all events, an effort should be made to prevent its abolition, or the leaving it entirely without means or duties.

OSSEOUS AND ARTICULAR LESIONS IN LOCOMOTOR ATAXIA.

THE advantages which the wide experience of a large hospital afford in the study of disease are especially well seen in the accumulation of many cases of comparatively rare disorders, or of unusual results of the more common. Such cases gravitate naturally toward these centres. And when to the great hospital is added a man of uncommon force and acumen like Charcot, this centripetal force is still more marked. Many of us have seen isolated cases of fractures and other bony lesions in ataxia, but at la Salpêtrière Charcot has had them by the score, and his accumulated facts are so much the more valuable.

In a recent number of the *Archives de Neurologie*, FÉRÉ presents an elaborate description of the specimens from eight cases not previously related, collected by Charcot since 1876, besides others which have been given to the Musée Dupuytren, the Hunterian, St. Thomas' Hospital, the Manchester, and other museums. Eighteen excellent woodcuts illustrate the paper.

One of these patients furnished the first complete ataxic skeleton ever examined, and with the result not only of verifying numerous lesions of bones and

joints recognized during life, but of discovering a fracture of the right ilium and left fibula, which had passed unperceived. For the first time also an arthropathy of the temporo-maxillary articulation has been observed *post-mortem*. In this series the hip-joint and the shoulder were chiefly affected, especially the first. The head of the femur and humerus had frequently disappeared, and in some cases the entire upper end was gone, leaving only a conical stump-like extremity, rough, porous, eroded, and corresponding to an equally diseased cotyloid cavity. Dislocation was not uncommon, and a striking full-length figure of a woman is given, in whom the end of the left humerus presented under the clavicle, and the upper end of the left tibia and fibula were dislocated backwards and upwards four inches above the condyles of the femur, stretching but not rupturing the crucial ligaments.

The now well-known frequency of fractures in ataxics finds several illustrations here. Some are re united firmly, others by fibrous union, and in one case the fragments of the ilium, though united on the internal surface by bony callus one centimetre thick and four wide, showed not the slightest trace of any effort at repair in the exterior. In another case the fractured head of the femur, instead of uniting with its shaft, had consolidated with the ilium in an acetabulum so eroded that the femoral head could be seen from the pelvis. Moreover, the head of the femur and the floor of the acetabulum projected as a bulging tumor into the pelvic cavity.

It is of not a little interest to observe that the very first hint of the spinal origin of these joint diseases was given by the late Prof. J. K. Mitchell, of this city, in the *American Journal of the Medical Sciences* so long ago as 1831 and 1833, and that his son, Dr. S. Weir Mitchell, in the same Journal, in 1873 and 1875, has made some of the late and, we regret to add, rare American additions to our stock of knowledge in reference to such articular and osseous lesions. To Charcot, however, more perhaps than to any other one author, do we owe our knowledge of the subject. He has insisted, as opposed to Volkmann and others, that the lesions are not traumatic but spinal in their origin and trophic in their character, and, again, that the joint disorders are totally distinct from those of ordinary dry arthritis.

Certainly specimens and cases, such as these and others which he has described in his *Leçons*, seem to prove both of his points to be well taken. The period at which the troubles occur, long before the incoördination of the later disease; the absence of prodromata; the malignancy of the disease, as evidenced by the rapid and complete erosion and even disappearance of the whole upper end of so large and stout a bone as the femur, with other almost as striking characteristics, are *primâ facie* evidence of the correctness of his view. Moreover, the peculiar articular lesions following injuries to the peripheral nerves, as well as of the cord, first pointed out by Weir Mitchell and his colleagues during the late civil war, and now well recognized as clinical facts, are very strong evidences in favor of the neurotic origin of such osseous and articular lesions, even though of so extraordinary a character.

THE TREATMENT OF TYPHOID FEVER.

In a recent discussion before the *Académie de Médecine*, Dr. Dujardin-Beaumetz passed in review some of the methods now most employed in the treatment of typhoid. These methods may be referred to two categories: the antipyretic; the antiseptic. The antipyretic consists chiefly in cold baths and massive doses of quinine. The bath treatment is not without danger in the way of causing congestion of the lungs, and the use of quinine in the large doses now employed would produce toxic effects if it were absorbed, but the greater part of it may be recovered from the stools. Salicylic acid causes stomach trouble: and if well borne does not modify in any way the severity of the disease, or lessen its duration. Carbolic acid is a dangerous medicine, which may induce collapse or set up pulmonary congestion. In the estimate made of any plan of treatment, the type of the epidemic must be taken into account.

Rejecting thus in turn the various novelties of treatment, Dr. Dujardin-Beaumetz maintains the superiority of that which he styles "the classical." It consists in the occasional administration of purgatives, a proper alimentation, careful attention to the hygiene of the patient, and the use of means to combat unfavorable symptoms as they arise. In other words, except the use of purgatives, his method is that entitled "expectant" in this country.

STRAW IN THE STREET CARS.

Notwithstanding the comparatively recent introduction of street passenger cars, there remain certain usages connected with their service which are relics of the barbarous past, and which are totally void of excuse. Notable among these barbarisms is the condition in which our horse-cars are kept during the winter months.

While cars transported by steam are models of comfort, and even luxury, the comfort and health of those multitudes who are compelled to use the street-cars of our large cities are treated with absolute contempt. Nay, there would seem to be a reckless disregard of the comfort and health of those who patronize these vehicles.

Let any one fresh from reading a description of Koch's investigations on the "bacillus tuberculo-

sis," enter a street car on a wet, muddy, winter afternoon. Let him glance at the damp, soggy, straw or hay which covers the floor, and notice the frequent expectoration in the material thus carefully provided for the cultivation of germs, and we defy him to avoid the ardent hope that Koch is in error, and his bacillus imaginary. No wonder that so many prefer to take their chances of pneumonia and pickpockets upon the rear platform.

Should the day be cold, and the door and windows be carefully closed in consequence, the street-car traveller may reflect upon the scars adorning his neighbor's face, and amuse himself by estimating how many as yet undetached variolous crusts still adhere to his person, or he may pursue his reflections so far as to speculate how many may become detached and find a resting-place in the luxurious hay carpeting at his feet.

We need not follow the investigator into his speculations concerning the whole list of contagious diseases. Of one thing we may rest assured, that he will arrive at the conclusion that the ingenuity of man has not devised any one thing better fitted to both concentrate and disseminate morbific poisons than the average horse-car in winter. Such a state of things is a disgrace to our civilization, and results from an utter absence of progressive spirit on the part of the managers of these corporations. It comes from simply allowing things to remain as they were in the beginning. In this case there is every reason why they should not so continue, and there is no excuse for street cars not being both properly warmed and ventilated, since numerous efficient devices to this end are in the market.

The enormous power wielded by street railroads makes it difficult to deal with the matter by municipal legislation. Nevertheless, the evil is a great one, and is worthy of most careful consideration by all who are interested in the health of the public.

THE QUALIFICATIONS OF A HEALTH OFFICER.

THE rapid advance in sanitary knowledge, and, as a consequence, the more exacting demand for a careful and wise administration of sanitary law, requires a rigid scrutiny into the qualifications of all executive officers of health. So varied and responsible are the duties entrusted to the health officer of a large town or city that, without special knowledge and training, and good administrative ability, the holder of the position cannot successfully discharge the obligations of the trust. Recognizing the soundness and wisdom of this principle, the local government of England has long since required that all health officers shall be medical men, who, by education and training, are especially fitted for the work of investigating the causes and prevention of diseases, the management of epidemics, supervision of sanitary inspections, and the intelligent administration of the laws of health.

It happens too often in this country that the position of health officer is one of political reward, without consideration of personal and professional qualification. The result is an inefficient, haphazard, and automatic execution of the laws, and a failure to judiciously and efficiently carry out the duties of the office, through ignorance of the fundamental principles of public and private hygiene.

A health officer should be an experienced sanitarian, and a physician of thorough education. He should be capable of advising the sanitary authorities in all matters affecting the health of the people, and he should be competent to intelligently inquire into the causes, origin, and distribution of diseases, to ascertain to what extent they are capable of removal or mitigation, and to make use of all the means at his disposal for the preservation of the public health. He should give his entire services to the position; he should receive a liberal compensation, and should have the assurance of continuance in office so long as the duties of it were judiciously and efficiently discharged. The present uncertain tenure of office is a bar to an eligible appointment, as none but a professional office-seeker is willing to throw aside the advantages of a permanent avocation for an office of uncertain tenure.

The recent selection of a health officer for Philadelphia ignores the fact which we have endeavored to set forth that special knowledge and training are preëminently the qualifications required for such an important office.

LEITER, the well-known instrument maker of Vienna, has introduced an apparatus for the local application of heat or cold. It consists of a flexible metal tube, which may be made to adapt itself to any surface. Thus, if it is desired to apply a given temperature to the abdomen, the tube is coiled on itself until it has the proper size, and moulded to fit the surface. The entrance tube is connected with a vessel containing water at the desired temperature, and the exit tube empties into any suitable receptacle. The principle is by no means new, but the adaptation of flexible metallic tubes which can be moulded to any unequal surface, is the point of novelty. At Billroth's clinic these tubes have been employed by Dr. Mikulicz in joint inflammations, in phlegmon, in traumatic delirium, in erysipelas, in rapidly growing sarcomata, and in neuralgia. Sometimes heat, sometimes cold, is found to be more effective. They are applied with equal facility, of course. The ordinary rule for their application is equally operative in the use of these tubes—the sensations of the patient being the true guide to the degree of heat or cold respectively.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, January 18, 1883.

THE VICE-PRESIDENT, ROBERT F. WEIR, M.D., IN THE CHAIR.

THE SECRETARY read a letter from Dr. Charles Mill, in which he presented an elaborate engraving of John Hunter to the Academy. Enclosed was a printed slip, taken from *Harper's Magazine*, descriptive of the engraving. The engraving was the work of Mr. William Shaw, a celebrated engraver of the last century.

DR. ADAMS said that the original portrait, from which this engraving was made, was in St. George's Hospital. He moved that the thanks of the Academy be extended to the donor for his generous gift.

The first paper of the evening was by Dr. PAUL F. MUNDÉ, and was entitled,

SECONDARY PUERPERAL HEMORRHAGE.

While the occurrence of more or less alarming uterine hemorrhage immediately after or during the first twelve hours following delivery is by no means uncommon, and has been thoroughly discussed in all the text-books and in the current medical press, the subject of metrorrhagia at a later period of the puerperal state, so-called "secondary hemorrhage," has received comparatively little attention.

The author reported the case of a woman twenty-five years of age, whom he had seen in consultation in her fourth labor, which was very tedious, and after it had lasted for twenty-one hours, the forceps were applied, but slipped. After a short time delivery was effected by perforating the cranium and applying the cephalotribe. The cause of the difficult labor was hydrocephalus. On the sixteenth day she was taken with profuse hemorrhage, which soon threatened her life, but from which, by appropriate treatment, she ultimately recovered.

The subject of secondary hemorrhage occurring at a late date was then considered, and the paper concluded with the following brief rules for the management of the third stage of labor, and the early puerperal state:

1. Always keep the supporting and compressing hand on the fundus uteri from the moment the head appears at the vulva until the placenta is expelled.

2. Do not hasten the expulsion of the placenta too much, but by steady, gentle friction of the fundus endeavor to obtain its total spontaneous detachment, the occurrence of which can easily be detected by the uniform firm outline of the contracted uterus on palpation.

3. Always watch the uterus with the hand, using gentle friction for at least an hour, at intervals, before leaving the patient.

4. Always give ergot (one drachm or more of the fl. extr.) by the mouth, immediately after the birth of the child. If chloroform has been given for an operation, or if the labor has been unusually tedious, give the ergot hypodermically, injecting a syringeful of the fl. extract to the depth of one inch, near the umbilicus. It is always advisable to have the syringe filled with ergot, and to see that it is in good working order, before the conclusion of the labor.

5. Always have ice on hand; and if the uterus shows a reluctance to remain contracted, rub the fundus gently with a piece of ice, or insert a cone-shaped piece into the cavity. (As a rule, the injection of *hot* water, while a powerful styptic, is less agreeable to the patient at this time, and will scarcely be employed unless actual hemorrhage occurs.)

6. Always make sure by palpation and compression that the uterus contains no coagula, and if such still form at once express them.

7. Aid in securing permanent contraction of the uterus by an early application of the child to the breasts.

8. If the labor has been tedious or instrumental, or the uterus contracts badly, or the patient is not to nurse the child, or is constitutionally feeble, it is wise to guard against sub-involution and a long continuance of the bloody lochia, by giving the patient a pill containing one or two grains of Squibb's aqueous extr. of ergot, two grains of quinine, and one-third of a grain of extract of nux vomica, three times a day, for ten days or two weeks, or longer, beginning on the day after delivery. If the stomach is irritable, this combination may be given in rectal suppositories, the quantity of ergot being doubled.

9. Before leaving the patient, an equably tight binder should be applied, and if there be tendency to hemorrhage, a pad should be placed under the binder over the fundus, to secure its steady compression.

10. Examine the cervix and vagina with the finger immediately after delivery, and if there be a laceration of either, be prepared to check possible future oozing by mild astringent injections, or, if need be, applications through the speculum. (Immediate suture, as recommended by some, appears to be rarely feasible.)

11. Do not allow a lying-in woman to make rapid motions in bed, strain, sit up suddenly or very long, or to leave her bed before the tenth day.

12. Keep watch of the bladder, particularly during the first twenty-four hours, and assure yourself by palpation and percussion that it is empty and is not interfering with uterine contraction.

13. Instruct the nurse not to insert the nozzle of the syringe too far, or to use too much force in giving the customary cleansing injections, for fear that the cervix may be bruised.

DR. POLK thought that the causes of secondary uterine hemorrhage were not dissimilar to those of hemorrhage occurring elsewhere. Hence, it has been his rule, when he had found slight hemorrhage, to be on his guard against those conditions which were generally supposed to predispose to hemorrhage. If uterine contraction takes place in the first instance and coagula are formed and are permanent, there will be no hemorrhage; but if, in consequence of disease, lymph is not exuded, and the vessels do not contract properly, and the proper organization of the tissue does not take place, the clot is absorbed and the mouths of the vessels remain open. Now, the conditions which will interfere with the proper closure of the vessels are very numerous. Among these should be mentioned, first, those included under the term of pueperal fever. These prevented the contraction of the uterus, and at the end of four or five days we would find the fundus of the uterus in the neighborhood of the umbilicus. The other conditions are mainly constitutional, and may be summed up under the head of any of the cachectic states, such as malarial, or those conditions due to the poisonous effects of minerals, such as lead or mercury, or any substances that might interfere with the plasticity of the blood. He believed there was a large number of conditions, any one of which might give rise to hemorrhage, provided we have a certain amount of interference with the organ itself, such as washing it out, premature intercourse, retention of urine, etc. He was sure that he had seen a good deal of prostration in consequence of the prolonged use of cold in this condition, and also that he had never seen any ill effects from the use of hot water, which should be as warm as the hand could readily bear.

DR. PARTRIDGE agreed with Dr. Polk as to the causes of secondary hemorrhage, and if he were asked to point out a woman who would be likely to suffer from secondary hemorrhage, he would select one with flabby muscles, irregular cardiac action, and such symptoms as were attributable to defects in the circulatory system; also, those suffering from derangement of the sympathetic system. He once had an alarming case of secondary hemorrhage occurring on the ninth day after labor. When he reached the patient, she presented symptoms of extreme loss of blood, her face was pallid and she was in a state of syncope. The uterus and vagina were filled with clots, and the bed-clothes were saturated with blood. Upon examination, it was found that there was an annular slough of the vaginal end of the cervix, from which a profuse hemorrhage had occurred. In this case there was an early rupture of the membranes, owing to the frequent pains and great pressure of the head. In studying this subject, he had found that in cases where there was resistance to the downward coming of the head, there was more tendency to uterine hemorrhage.

With reference to treatment, he thought there was very little more to be said; when such a condition of the general system as he had pointed out could be recognized, he thought it was of importance to watch the patient with exceeding care. In regard to local treatment, if the hemorrhage depended upon laceration, he would say use iodine applied to the bleeding surface with cotton. Septic absorption was not common before the tenth day, but it sometimes occurred earlier. In most cases of laceration the separation of the slough occurred on the seventh day, but in those cases where the laceration was of very considerable extent, the separation of the slough did not take place so soon. In such cases, the use of the tampon was particularly to be avoided. He could not use the tampon unless other methods had proved useless. He concurred in the opinion as to the non-desirability of sewing up the cervix at such time.

DR. HANKS remembered a patient coming under his observation who suffered from excessive uterine hemorrhage occurring fourteen days after confinement. In this case, the cause of the hemorrhage was undoubtedly due to malarial poisoning. Though the patient was thoroughly exsanguinated, yet after washing out the cavity of the uterus with warm carbolized water, she finally rallied. He had had another case undoubtedly due to malarial poisoning, which came on nine days after confinement. In this instance the hemorrhage was controlled by intra-uterine injections of hot water. He did not usually make use of the tampon, and would not recommend it on account of the difficulty of applying it under such circumstances. He thought that the application of iodine could generally be relied upon to arrest the hemorrhage. He begged to differ from the author in the use of ergot in all cases after labor. He did not think this practice was necessary. What was necessary, however, was to watch the patient carefully, and if there were any signs of danger, then to use ergot.

DR. MUNDÉ preferred the introduction of a conical piece of ice into the cavity of the uterus to the injection of hot water, as he thought it would be as efficacious as the latter, and more agreeable to the patient. The subject of chronic lochial discharge, or, as it has been termed, *hemorrhagica lochialis*, he thought was of sufficient importance to demand separate consideration. These cases of profuse lochial discharge might continue for months. They were due to want of uterine contraction, and to the formation of healthy mucous membrane. As to the use of the tampon, he would not recommend its introduction into the vagina after the delivery of a full-grown child. In the use of ergot he saw no evil effects beyond the slight nausea, and he thought it was a safe practice to use it in all cases. He would, however, consider its use hypodermically as unnecessary, except where it was especially called for to arrest hemorrhage.

The next paper was by DR. EDWARD B. BRONSON, and was entitled

ECZEMA, ITS PATHOLOGY AND PRINCIPLES OF TREATMENT.

The author referred to the importance that is generally attached to the changes that take place in the vascular layer of the skin, in eczema. The part played by the epidermis in this disease was commonly regarded as secondary and subordinate. He maintained that the epidermic lesions were rather of a primary and initiative character, and considered the epidermis to be the focal point of the eczematous process. The researches of Velpeau and others had shown that the cells of the rete Malpighii took an independent part in the disease that was analogous to that of the endogenous formations that characterize inflammation of other non-vascular structures, such as cartilage tissue, the cornea or the epithelium of the epiploa. The formative changes that took place in these structures when inflamed, originated in the normal, endogenous cells of the part and not in cells that had wandered from the bloodvessels. But though the pathological process was initiated in the cells of these structures, the adjacent vascular tissue soon sympathized. The papillary vessels responded to an irritation in the epidermis, as did the subconjunctival vessels in irritation of the cornea.

Next the qualifications of the epidermis for initiating an irritative process in the skin were considered, and in this connection, reference was made to recent researches concerning the cutaneous nerves—more especially the nerves of the epidermis. Of these researches, the most important were those of Pfitzner and Unna. These investigators had shown that each prickle cell in the rete mucosum was provided with two nervous filaments which penetrated the cell wall and terminated within the cell by bulbous extremities. It was urged that this extraordinary nervous supply to the epidermis could not but have an important bearing upon the pathology of eczema.

The most constant and essential factors in eczema were sensory disturbance and trophic change in the epidermis. The trophic changes that took place in the derma were regarded as secondary and contingent. Impairment of the integrity of the epidermis was the necessary condition of every form and phase of eczema. It, more than any other feature of the disease, distinguished it from the erythematous diseases. The desquamation that occasionally occurred in the latter was the result simply of nutritive impairment due to vascular disturbance beneath, but in no wise corresponds to the degenerative lesions of the epidermis in eczema. It was probable that this trophic change of the epidermis in eczema was under the influence of the epidermic nerves.

Furthermore, it was claimed that the sensory disturbance so characteristic of the disease, viz., the itching, was owing to disorder of these nerves. Evidence was adduced to show that the diseases of the skin which are attended with pruritus always implicate, in a marked degree, the mucous layer. In urticaria, the lichens, prurigo, scabies, and vesicular diseases in which the vesicle was deep seated, sensory disorder was an important feature, and in all of them the mucous layer was markedly involved.

No great importance was attached to the different lesions of the nerves that have been described as associated with eczema. They simply served to show the intimate relation of the disease to the nervous

system. The initial motive of the morbid process—exciting cause—might be developed from various sources: direct external irritation of the epidermis, reflex irritations, central nervous derangement, or diseases of the nerves, either in their continuity or at their periphery.

Eczema, then, was a disease the main factors of which were a cutaneous inflammation of a catarrhal character, seated primarily in the mucous layer of the epidermis, involving the derma incidentally to a greater or less extent, and accompanied with marked disorder of the tactile sense.

Ordinarily there is but little tendency to spontaneous recovery.

The obvious therapeutic indications are, first, to allay irritation, and second to assist repair.

The first requires the elimination, as far as possible, of all sources of irritation, whether extraneous or inherent, together with the protection of the damaged epidermis. The second indicates the use of such stimulants as will combat the tendency to chronicity. Measures of rest and measures of stimulation constitute the whole treatment of eczema. Two methods are possible—mediate and immediate—the first by internal, the second by external medication. The accessibility of the suffering tissue in eczema would naturally suggest the method of direct application, which was first considered.

The agents used in the local treatment of eczema are either mechanical, chemical, or dynamic in their action. Mechanical agents are chiefly valuable for protection, answering the same purpose as the simple dressing in the treatment of a wound. They include various inert powders, lotions, simple ointments, and emollient applications generally. The indications for the different varieties of this class are not precisely identical. As a rule the highest grade of inflammation, as in the acute erythematous form, is best treated by wet applications. These abstract local heat by evaporation, and prevent local desiccation of the superficial epidermis—a harsh, dry condition that tends to increase the irritability of the subjacent nerves. The lotion may either hold in suspension powdery substances that collect upon the epidermis and supply a soothing envelope, or it may contain chemical materials that exert a slight modifying influence, such as mild astringents or alkalies. Lotions, however, if employed, should be used continuously. Alternate wetting and drying of the inflamed skin increases the irritation. A small quantity of glycerine generally improves the wash. Undiluted glycerine is an irritant. Emulsions, also, are well suited to this stage of the disease. When the inflammation is less intense (acute papular eczema), the insoluble powders are the best application. Between lycopodium, starch powder, talc, calamine, oxide of zinc, bismuth, and the like, there is little to choose, if only the applications be copious and frequent. The effect is increased by first smearing the skin lightly with cold cream, glycerine and water, or some soothing emulsion, thereby affording a surface to which the powder will better adhere. A little later comes the period for the use of ointments. The skin has become rougher and harsher, the cuticle brittle and ragged, the surface covered with scales, crusts, and abrasions. Vesicles appear here and there, or, more commonly, minute punctate excoriations. From this time forth the cure is usually hastened by the continuous protection of an appropriate ointment, until the epidermis is sufficiently regenerated to perform its protective functions unaided. Such an ointment should be absolutely non-irritating, smooth, homogeneous, and free from rancidity. It should not be so greasy as to be easily displaced; it should not soften the cuticle so much as to render it more vulnerable; but should be of a proper consistency to afford a perfect shelter to the exposed and irritable structures, and at the same time prevent undue desiccation. It is difficult to find any application that better meets all these requirements than our common zinc ointments. Rarely is any other preferable. Under its protection and control, stimulation may be produced by certain measures, intermittently, or, if desired, more constantly, by modifying the ointment by the addition of various medicaments.

But eczema has certain phases to which ointments are not suited. As already indicated, they should not be begun at a very acute stage of the disease. Furthermore, where the surface is eroded and exudes a copious and ichorous discharge, the effect of all ointment is generally unfavorable. An astringent wash or, better, an absorbent powder is preferable. Gypsum, if free from gritty particles, added in the proportion of one to four or one to eight, increases the absorbent power of the powder.

A class of agents, the action of which is far more complex and obscure, is the group that acts as modifiers of vital action. By far the most important of these are the alkalies. Their value in almost every stage of the disease has long been established. In fact, inflammations of cutaneous and mucous surfaces, almost without exception, are beneficially affected by their use. Their sedative influence is an important element in their action. No more certain anti-pruritic exists, and no remedy affords greater relief for the heat and burning of an inflamed skin than external alkaline applications. The virtues of the alkaline bath are rather under than over-estimated. Although medicinal agents are probably unable to penetrate the intact cuticle, yet when applied over an extensive surface they gain sufficient access to produce decided effects. Employed over a small surface the alkaline effect is very marked when the corneous layer is abraded and the nervous structure of the epidermis exposed. Dilute alkaline washes answer well for the acute stage of eczema. Later, when pathological products, difficult to dislodge, accumulate on the surface, alkaline soaps are preferable. In old chronic cases with decided thickening and thick laminæ of adherent scales, the stronger potash soaps are indicated, as the "Schmierseife" of the Germans, or, better, the "Sapo Olivæ Præparatus" first brought into notice by Dr. G. H. Fox. When the scales and crusts are thinner, the milder soda soaps should be used, preferably those made with glycerine and a small proportion of alkali. Lang's, Rieger's, or Pears' soaps are the best.

In squamous eczema, the "soap treatment," which we owe to Hebra, if thorough, has no equal, and the relief is almost immediate. The frictions themselves would cause useless irritation did they not remove the source of greater disturbance. In squamous eczema there are almost always vesicles deep down in the rete, imprisoned by desiccated epidermis or dried secretion above. The epidermic nerves are intensely irritable. The soap clears away the irritating pathological products, evacuates ichorous fluid formed in the vesicles, and brings the liberated alkali into direct contact with the diseased tissues, thereby modifying the pathological processes, and exerting a direct sedative influence upon the adjacent nerves. Moreover, the stimulating effect doubtless promotes absorption and assists reparative effort. Seldom is any stronger alkali than that contained in soap required. For simple caustic effect, agents that act more superficially are preferable, as carbolic acid or nitrate of silver. The latter, or its solution, is generally most useful in circumscribed forms of moist eczema, in which there is a pyogenic condition. Hot water is of value to allay the pruritus of eczema. It accomplishes this by first substituting the sense of smarting for the itching, and

later by its direct sedative action. The hot water should not be stopped too soon, if the full benefit of its use would be derived. Violent scratching temporarily relieves the itching, the "paræsthesia" of pain prevailing over and excluding the paræsthesia of pruritus. Carbolic acid is a very useful remedy in eczema; when strong, it annihilates vital action; moderately concentrated (from ¼ to ⅛), it allays local excitement and produces sedation; dilute, it acts similarly to the tarry remedies. Irritable fissures are benefited by strong applications. Moderately strong solutions have decided anti-pruritic virtues. They are especially adapted to cases in which the area involved is small and the itching intense, as in eczema of the anus. Dilute solutions are useful in those cases benefited by tar and its congeners. Tar in cutaneous affections probably acts as do terebinthinate and balsamic substances in diseases of the mucous membrane. They are generally most useful after the acute stage has passed, when the nerves have lost some of their preternatural irritability, and the condition is one of impaired energy, of relaxation, and of congestion, more or less passive in character. They improve vascular tension, and check excessive secretion. They should be employed at a comparatively later period in eczema than the corresponding remedies in inflammation of the mucous membrane; perhaps because in the latter case, when the drug reaches the seat of trouble, it has become less irritating by dilution or modification of its ingredients. It is a good rule in eczema, that during the stage of active exudation in the mucous layer, tar is contra-indicated.

Little need be said of narcotics. Certain of them, however (notably camphor), because of their volatility are useful adjuvants in case there be pruritus.

Mercurials, though sometimes beneficial early, are chiefly of value in the latest stage, when acute inflammation has subsided, but when nutrition is interfered with by the products of inflammation accumulated mostly in the cutis and subcutaneous tissues. Mercury is especially useful in removing such products, fibrous or cellular, because of its hostility to living organisms. It attacks first recently formed and imperfectly formed tissues, impairing their vitality and predisposing them to rapid subinvolution and resorption. Besides this—its peculiar, its pathognomonic action—it has also a stimulant and substitutive effect.

The "impermeable dressings," more especially the rubber applications, are decidedly advantageous in advanced eczema with marked thickening. They macerate desiccated and thickened cuticle, the removal of which enables the deep vesicles to discharge. They also cause a substitutive inflammation, which, by countervailing the chronic eczematous process, assists repair. When the artificial inflammation becomes severe the dressing must be removed.

Though the agents enumerated embrace a wide range in therapeutics—emollients, sedatives, astringents, irritants, excitants, and alteratives—they are divisible into two classes corresponding to the two main indications for the treatment of the disease. To one class belongs the function of protection: to the other that of aiding and directing reparative effort. Early, before the morbid habit is confirmed and the natural reparative power seriously impaired, protective measures alone may suffice. Furthermore, they are indicated during the later stages, to prepare the way for stimulant or modifying agents, and to control their action. It is upon the proper apportionment of these two opposed, but virtually coöperating, therapeutic measures that success in the treatment of eczema will mainly depend.

The indications supposed to call for internal medication may be divided into four sets: (1) For the relief of internal disorders that affect the skin by reflex irritation. (2) To remedy general debility or special systemic diseases that are accompanied by defective innervation or innutrition of the skin. (3) To reinforce the local resources of repair by the administration of drugs that either act directly on the skin by selective affinity; or, else (4), To set up internally a transpositive irritation to divert a share of the cutaneous excitement to other organs.

Sometimes eczema appears to be due to internal causes, because of the absence of any unusual source of external irritation. Oftener it results from the combined effect of an irritation acting from within, and another acting from without. Reflex irritation, such as disturbance of the digestive or generative functions, rarely suffices alone to cause the disease; but when it is prolonged, the cutaneous nerves become so irritable and debilitated that they can no longer tolerate such external influences as, under ordinary circumstances, would be insignificant. Moreover, in systemic diseases attended with a general debility, gout, rheumatism, lithæmia, uræmia, diabetes, and the like—the nutrition of the skin suffers in common with that of other tissues, and these develop a predisposition to disease. Still further, back of the predisposition arising from conditions that affect the general health, it is necessary to infer the existence of a special cause that determines the cutaneous outbreak in that limited class of individuals known as the eczematous. The French school of dermatologists attribute this special cutaneous susceptibility to a special dyscrasia. Eczema is the expression of a systemic malady which at certain periods and under various influences becomes intensified, betraying itself by the appearance of the characteristic lesions of the skin. Of this peculiar diathesis, "*les dartres*" constitute the sole manifestation and evidence.

But is this the only possible explanation? Is no consideration due the inherent nature of the skin affected, its peculiarities of organization, the measure of its tolerance of irritating influences? Why should not the skin in different individuals differ as widely in its constitution and morbid tendency as do their other organs, their nervous, digestive, pulmonary or muscular systems? Some weaknesses arise from defects of anatomical structure; in others, defect of organization is less patent, but is betrayed by frequent derangement of function and proneness to disease. Thus in the eczematous subject, though his general health is not necessarily impaired, at every departure from health the skin is quick to take offence. Whatever may have been the original internal or external exciting cause the cutaneous effect is often a wholly disproportionate one, one that could only be produced upon an organ capable of but feeble resistance. The eczematous usually, but not always, have dry, harsh, irritable, itching skins; moreover they differ in degree of vulnerability and in disposition to recover from the outbreaks.

The external manifestations are constant because eczema is the natural expression of a simple inflammatory action of the mucous layer of the epidermis. When an irritation can no longer be tolerated by this tissue, its vitality succumbs, and the legitimate outcome is eczema. Its physiognomy is not always the same, and it is possible that there may be allotropic forms depending on individual peculiarities. These may so differ from the simple type as to present the features of a different disease.

Therefore, whatever causes in the economy at large may predispose to eczema, the most essential predisposition is in the skin itself. Eczema, then, is essentially a local disease, and the most rational treatment is that which addresses itself most directly to the offending part. Oblique methods, however, are of value, and should not be ignored. At the outset, and

in obstinate cases generally, powerful internal diversion will often so allay the cutaneous excitement as to determine the success of the local treatment. Tonics, regimen, diuretics, purgatives, alkalies, in discreet hands are invaluable adjuvants. Internal medication must always be subordinate. There is no "specific" for eczema. It will not do to depend on the "selective affinity" of internal agents for the tissues affected in the disease. Narcotics should be mentioned, but to be condemned. Manifest derangements of special organs or of the general system should be appropriately treated. In chronic eczema the original cause has usually long ceased to be operative. In the majority of cases local treatment is well able to cope with the disease single-handed.

DR. TAYLOR remarked that we have cases where the whole skin is involved, and in some cases the subcutaneous tissue beneath it, so that if the author would include this in his description of the pathology, he thought it would make his paper more complete, though he conceded its excellence in its present form. The principles of treatment, Dr. Taylor believed, could be formulated somewhat as follows: In the first or erythematous stages of the disease, soothing applications in the form of powders, starch, oxide of zinc, arsenic, calomel, with the addition of camphor as a slight stimulant, or a lotion, as lead and opium wash; later in the disease stimulants should be resorted to. He thought that the proper use of stimulation was one of the cardinal points in the treatment of this affection. Protective agents should first be used, and then stimulants. He agreed with all the author had said with regard to the use of soaps. In many cases he thought that we could go a step further, and even make use of strong solutions of potash. Soaps would sometimes fail where potash in strong solutions (say a drachm of caustic potash to an ounce of water) would succeed. The production of additional inflammation should be avoided. He was glad to hear the author take the ground that he did in regard to the nature of eczema. He believed that, whatever the general condition of the patient was, the disease itself was a local trouble. There was one point which he thought was not well brought out, and that was that patients not infrequently apply for treatment with eczema who have had it for a long time. In these cases, if we go back into their history, we find that in early life the patient had suffered from repeated attacks of local eczema. In this way the tissues had been rendered more vulnerable all through life than they otherwise would have been. He thought it could be stated that, as a rule, the more frequent the attacks in early life, the more liable the patient was to late attacks. In regard to the use of internal remedies, he agreed with the author as to the desirability of administering alkalies. He thought that one remedy had been neglected by the author of the paper, and that was arsenic. Arsenic would assist the internal treatment very much. The golden rule in handling cases of eczema was to look after the local treatment. Arsenic had a good effect upon the skin. If he were to indulge in a theory as to its action, he would say that it stimulates the capillaries, giving them tonicity, thus enabling them to hold their own.

DR. BULKLEY thought that the subject of alterations in the cellular layer of the skin was an exceedingly important one, and of late years had received insufficient attention. He had been much interested in noting the effects of tobacco in this disease. His attention had been called to a case of eczema of the anus by Dr. Frank H. Hamilton, in which the patient had a recurrence of the disease each time he used tobacco. He had watched the influence of this practice upon this class of cases in a number of instances. One case had come under his notice where an attack was brought on by smoking a single cigar. These facts, he thought, had a bearing in the direction of the nervous origin of eczema. Dr. Bulkley thought that in the majority of instances it would be found that patients suffering with eczema were not otherwise perfectly healthy. He had great confidence in the use of the tonic treatment combined with alkalies. It has been said that there is no specific for eczema, and he himself had made such a statement. He had, however, reported several cases of the disease recurring in children where the use of arsenic internally, without any local treatment whatever, had resulted in a rapid cure.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, December 28, 1882.

THE PRESIDENT, JAMES TYSON, M.D., IN THE CHAIR.

TUBERCULOSIS OF SPLEEN, LIVER, AND KIDNEYS.

DR. SHAKESPEARE exhibited these specimens without a history of the case. They showed exuberant vegetations in pericarditis, abundant miliary tubercles of the pleura, of the liver, of the spleen, of the kidneys, and of the lymph glands in the region of the head of the pancreas. They were brought to the notice of the Society mainly because the members had not had many opportunities of examining such perfect examples of extensive and diffuse tuberculous infiltration without more serious involvement of the parenchyma of the lungs.

Autopsy (six hours after death).—C. J., colored, æt. 60. Diagnosis: Pericarditis and pleuritic effusion, with strong bands of adhesions between parietal and visceral pleura. Thorax: left pleural cavity completely obliterated by adhesions; right pleural cavity contained a large amount of straw-colored serum. The lobes of this lung were compressed against the spinal column, and were stalactitic. The lower lobe was firmly adherent to the diaphragm, and the three lobes were strongly united by adhesions. The parietal pleura was thickened and everywhere studded with minute, gray, semi-opaque miliary tubercles; the visceral pleura was in a similar condition, except that the tubercles were less numerous. The cut surface of the right lung presented nothing abnormal, save absence of air, but the sense of touch showed beneath and near the pleura a few scattered minute points, much smaller than millet seeds. The pleura of the left lung was also studded with numerous miliary tubercles, and the tissue of this lung was similar to that of the right; it was, however, crepitant. The pericardial sac contained 2½ ounces of straw-colored serum. The whole heart was covered with an exuberant crop of vegetations. The cardiac walls were perhaps slightly softer than usual, otherwise normal. Abdomen, peritoneum, normal; no effusion; liver slightly enlarged, with surface here and there raised by flat elevations ranging in size from a hempseed to that of a hazelnut; capsule normal. The nodules were firm and of a yellowish tint; the intervening tissue was of a dark red. Deep section of the organ revealed similar nodules diffused through its substance, which seemed otherwise firm and normal. The spleen was slightly enlarged, firm, and extensively infiltrated with tubercles. The pancreas was normal, but the lymph glands near it were much enlarged, but neither softened nor caseous; no caseous focus was anywhere detected. The kidneys appeared normal, except for one or two more or less pyramidal yellow points. The case presents several points of interest: 1. Former history unknown. 2. Several aspirations, removing considerable pleuritic fluid. 3. What was the origin of the numerous tubercular irruptions, and if there was

auto-infection, what was its probable source? Dr. Tyson then gave a *résumé* of the ante-mortem history.

DR. TYSON said he regretted having to admit that he was less familiar with the history of the case than he should have been, since the patient was in his own wards in the Philadelphia Hospital. Thoracentesis had been performed more than once. The patient was a colored sailor, aged 60 years. When Dr. Tyson took charge of the ward in September, the man presented the physical signs of double pleuritic effusion, orthopnœa, and feebly transmitted heart sounds, but no cardiac murmur. There was œdema of the legs. He was tapped with great benefit, and under a restorative treatment he rapidly improved, so that he soon became one of the walking cases in the ward, attracting little attention. About December 1, he became very much worse. The orthopnœa and other signs of accumulating fluid returned, and so did the œdema of the legs. His urine was repeatedly examined for albumen, with negative results. He was tapped upon the right side and three pints of fluid removed with but partial relief. The other side was also aspirated without success. A cardiac friction sound was noted, which seemed to be pleuro-pericardial, but in the light of the autopsy it was probably pericardial. He died on the 13th of December. He was unacquainted with the temperature record.

DR. MUSSER said that a relationship between pleurisy and pulmonary tuberculosis could not be denied, but whether the pleurisy or the tuberculosis be antecedent, was difficult of solution. That the former is primary may be inferred from the fact that persons are considered as threatened with phthisis who have subclavian arterial murmurs, due to the pressure or pulling on the artery of organized lymph. Likewise are the various friction sounds and exocardial murmurs noted to precede tuberculosis, and especially to occur in those tuberculously predisposed. Examples of both cases have come under his observation. It seemed to him that a primary acute pleurisy is a rarity, occurring in a non-tubercular subject. The last series of cases of what would be called primary pleurisy he had seen were in persons predisposed to tubercle, and in some of the cases tubercle subsequently developed. In short, so called primary plastic pleurisy occurs only in tuberculously disposed individuals; other forms are secondary to some other process, as Bright's disease, septicæmia, etc. Trousseau calls attention to latent pleurisies with effusion, as being often an expression of a tuberculous diathesis, while also a latent pleurisy may occasion development of that diathesis. Two cases illustrating these views have lately come under his notice.

DR. O'HARA said that although he had not had much experience with latent pleurisy, he recalled a case of a young man seen five years ago, where extensive effusion into one side of the chest had unexpectedly occurred, and when detected had been removed by tapping. Apparent recovery then ensued, to be followed in a few weeks by copious effusion into the other pleural cavity. Tapping was again resorted to, the effusion never recurred, and the patient remains healthy and free from tubercle at the present time. He would like to ask if when the term "all the serous membranes were affected" was used, those of the brain were included.

DR. TYSON replied that there had been no head symptoms in the sailor's case.

DR. SHAKESPEARE closed the debate by referring to the causes of tuberculosis in general and its mode of diffusion through the organism. He called attention to the failure in discovering any caseous focus, while admitting the possibility of such, if minute, escaping the most painstaking search. In this and similar cases all that could be safely said was that *the caseous point was not found*. Assuming, for illustration, that the point in the kidney might have been the origin of the auto-infection in this case, he referred to the communication between the left renal vein and the inferior mesenteric vein, and the direct communication with the portal system thus effected. As to the point raised by Dr. Musser, he believed in plastic pleurisies distinct from tuberculosis. He had examined very many microscopic sections of pleuritic adhesions, and very many had proved to be free from tubercle. Authors who have made original investigations on man and the lower animals, have also as distinctly recognized a plastic pleurisy without tubercle, as they have one associated with this formation. He thought tapping in a person not predisposed to tubercle was no more likely to produce this disease than tapping an anasarcous limb. He was well aware of the facts dwelt upon by Drs. Musser and Formad, viz., the association of tapping with tuberculosis and of plastic pleurisy with tuberculosis, but he believed that the frequency of this association had been exaggerated. He thought that in view of the well-grounded belief that in certain classes of animals, as well as in certain families of men, inflammation tends to linger, to produce accumulations which are prone to degeneration, and to *excite* local or general tuberculosis, it is more logical to conclude that in such cases as above mentioned there is at the outset a tainted constitution—a soil already sowed with the dormant seeds of disease waiting to be awakened to their active processes of destruction by the stimulation of an exciting cause. The more frequent the action of the exciting cause, the more certain is this dormant tendency to be aroused.

DR. J. H. MUSSER exhibited

TWO CASES OF CARCINOMA OF THE STOMACH.

Case I.—Scirrhus of the pylorus; general proliferation of the connective tissue; interstitial nephritis. Malignant disease of the pylorus and of the lesser curvature of the stomach was diagnosticated when the patient applied at the Medical Dispensary of the University Hospital, May 14, 1882, for treatment, on account of the physical signs especially, and of some points in the clinical history. Palpation and percussion revealed a firm, non-pulsatile, immovable, slightly painful tumor in the middle of the epigastric region, one inch to the left of the median line, about the size of a turkey egg. When lying down the abdomen was slightly scaphoid, but the left upper quarter was distended. A curved line extending downwards from the umbilicus to the flanks, represented the lower limit of this swelling, which was soft and resistant, tympanitic on percussion, and with care could be discerned as starting from the hard tumor in the epigastrium. In short, it was due to a distended stomach. Although the tumor was not in the position of the pylorus, and although the patient had never vomited, yet pyloric disease was determined upon because of the gastric distention. On account of absence of marked obstruction, the position and the occurrence of pain in the *lumbar* region, disease of the lesser curvature and the posterior wall was decided upon. The autopsy revealed that the malignant growth surrounded the stomach at the pyloric end, but being greater in extent in the lesser curvature. An adhesion to the left lobe of the liver explained the position of the tumor. The patient first noticed the localization of the disease in November, 1881, by the occurrence of pain in the epigastrium following a jar. She noticed that her health had failed three months before, and that menstruation had ceased six months previous to the epigastric pain. Note here the failure of health before any local evidences of disease, not even dyspeptic symptoms. She

was a widow, æt. 40 years, with one child, her health had always been very good, her circumstances moderate, and her habits exemplary. In addition to a constant burning pain increased by food, her appetite was poor, tongue pale, with enlarged papillæ; flatulency was marked, and the bowels constipated. She presented a sallow, cachectic appearance, was somewhat emaciated, extremely anæmic, with cardiac, arterial, and venous blood murmurs, and accentuated second-sound. She was under observation until her death, October 17, 1882. The pain and constipation were relieved by treatment, but the course was only downwards. In addition, I may note the cachexia became more marked, and the classical appearance of the face was wonderfully depicted—transverse and vertical lines on the forehead and semi-circular lines around the mouth from the alæ of the nose to the chin, and vertical lines on the chin and lower lip. The hue of the countenance changed—growing darker and darker. This peculiar hue of the face Dr. Musser considered the most reliable symptom of approaching dissolution. It was noted one month before death. During the last two months of her illness she suffered much from soreness of the mouth and tongue without visible lesions; from burning in the fauces; difficulty of deglutition, acidity, vomiting taking place every third or fourth day of a clear acid fluid, coagulated milk bile-stained, and "coffee-ground material." A painless watery diarrhœa occurred frequently, with tarry masses. Œdema of the feet and ankles took place six weeks before death. The tumor grew in size and changed position, falling downwards. Three days before death it was noted to pulsate, was tender, and was three inches long, extending from the median line to the left on a level with the umbilicus. *Autopsy* (twelve hours after death).—Extreme emaciation; rigor mortis marked; œdema of feet. Heart slightly enlarged, the left ventricle walls 8¼ lines in thickness; heart weighed 7 ounces. Aorta 1 inch 1¼ lines in diameter, and slightly atheromatous. Deposits of fat along the septum were noted, and the muscular tissue itself was fatty. The stomach was in the position defined a few days before death, was greatly dilated, with the disease at the pyloric end extending along the lesser curvature four, along the greater curvature two, inches, and completely encircling the organ. The stomach walls became thickened, with much hypertrophied muscular coat, as they approached the diseased area. The internal surface of the tumor was flat, elliptical, and defined by an everted lip of varying thickness about 4 lines high. The surface was uneven, some nodules being half as thick. The most central portion presented distinct evidences of ulceration. The liver was rather larger than normal, seemed fatty, and was not indurated. The kidneys were small, hard, and the capsule peeled off with difficulty. Microscopic examination of the stomach, liver, and kidneys, Dr. W. E. Hughes assisting, showed abundant irregularly shaped epithelial cells packed closely in a fibrous stroma, but slightly developed in and containing numerous nuclei. Liver-cells fatty and pigmented. Proliferation of the connective tissue around the hepatic and portal veins was noted, many nuclei proving its recent origin. The kidney was markedly cirrhotic, the connective tissue being *not* of recent formation. Note the general proliferation of connective tissue in the organs. No albumen was detected during life in the urine, nor were any renal symptoms noted, yet there was undoubted interstitial nephritis belonging to the variety described by Gull, Sutton, and Mahomed. The malassimilation consequent upon the gastric lesion was the predisposing factor in the production of this general change.

Case II.—Scirrhus of the pylorus; symptoms simulating idiopathic anæmia. F. R., æt. 54, white, German, resident of a healthy locality, but much exposed as lumberman during the winter. Addicted to constant use of spirits, malt liquors, and tobacco. Had a fever of six weeks' duration at the age of sixteen years, and eight years ago some pulmonary inflammation. Never had malaria or syphilis. Does not know cause of mother's death; seven brothers and sisters healthy; father died of old age; his own three children living and healthy. Admitted to University Hospital December 20, 1878. During the previous winter had numerous gastric attacks, as shown by pain and loss of appetite. In the spring and summer he lost flesh and strength, and was subject to pain in the bowels and in the hepatic area, flatulence, pyrosis, and constipation, but never vomiting. On account of salivation in June, he became especially debilitated. At time of admission, weight 118 pounds, usual weight 170. Lies on left side, perfectly apathetic, with the physical and mental processes slow of action. Extremities cold, very anæmic, conjunctiva and mucous membrane very pale; sclerotics pearly white; complexion of a sallow, dirty hue. Palpitation of the heart, dyspnœa, and subjective ear-noises were noted. Temperature irregular; appetite poor; flatulence and pyrosis, pain and tenderness in epigastrium; no definable tumor, but a sense of induration. Hepatic and splenic areas of dulness normal. No venous hum. Heart sounds weak. Urine, sp. gr. 1018, neutral reaction, albumen one-sixth; no casts, bile, or sugar; phosphates not in excess. Blood, white corpuscles in excess, red greatly decreased in number. Ophthalmoscopic examination; slight retinitis. O. D. pallid; central artery dilated. Venous blood paler than usual. Absorption of choroidal epithelium, allowing choroidal circulation to be seen. Macula healthy; no hemorrhage throughout fundus. Both eyes present the same appearances. A low typhoid state soon developed, with diarrhœa and excessive flatulence. For three days prior to death vomiting occurred. He died December 30, 1882. *Autopsy.*—Stomach alone examined. It is to be regretted that the full record was lost. Stomach adherent to liver and transverse colon. Lesser curvature from pylorus half way to cardiac orifice, infiltrated with cancer, extending two inches over the anterior wall, and at the pylorus, encircling the organ. Pancreatic and biliary ducts pervious. Microscopically, the growth was found to be scirrhous carcinoma.

Remarks.—On account of the profound anæmia and the absence of tumor and vomiting, idiopathic anæmia was considered. The examination of the blood, and condition of the eye-ground, contra-indicated such a diagnosis. The normal size of liver and spleen, and the non-glandular involvement excluded leucocythemia. It is to be regretted that the exact numerical blood-count was not recorded. In this case the lesser curvature was very much involved, and a distinct tumor was absent; quite the opposite of Case I.

DR. A. P. BRUBAKER exhibited for Dr. H. LEAMAN, a

TUMOR OF BRAIN.

John J., æt. 53, laborer. When first seen, the patient was lying on his back, with head drawn backwards into the pillows, and complaining of stiffness and soreness in back of the neck. The mouth was widely opened and parched, and the breathing deep and heavy. He was in a semi-unconscious condition, from which, however, he could easily be aroused, but soon relapsed into his former state, which was attended by stertorous breathing. Speech and deglutition were both interfered with, but not abolished. There was involuntary passage of urine, but the bowels were constipated. Venereal ideas were excessive, but accompanied by complete impotence. Voluntary move-

ments of the extremities and also the power of coördination were considerably impaired. Pulse and temperature were normal. Liquid food was taken with difficulty. His condition had been as described four days previous to my first visit on September 4, 1882. The symptoms gradually increased and coma supervened, which ended in death, September 17, 1882. Following history was obtained from the family: Twenty-six years ago, the patient was confined to bed with "nervousness," for a period of two years, when he passed a calculus about the size of a date-seed; again a month later, another smaller one. His bladder continued to give him more or less trouble up to death. He had his clavicle broken nineteen years ago, but there was no injury to the head. About sixteen years ago he was suddenly seized while at work, with a severe headache, and became totally blind, which lasted for twenty-four hours. This was relieved by wet cups to back of the neck. From that time, he was subject to what they called "shaking spells"—when standing there would be a violent trembling of the knees and shaking of the arms. These attacks occurred about once a month, and occasionally three or four times a day. They increased from year to year in frequency and severity, and appeared to be excited by high winds and storms. In February, 1882, he was seized with paralysis, beginning in the left little finger, thence gradually extending to the ring and middle fingers, until the hand became powerless, but was able to move his arm. Then followed a numbness in the outer side of the left side, attended by impairment of the power of coördination, so that, on attempting to walk, he was compelled to run to keep from falling. He frequently fell in the street, and had to be carried home. Last February, loss of speech supervened, which lasted for one month; the patient then began to speak in monosyllables, after which speech gradually returned.

Autopsy.—Congestion of the entire brain. On removing it, four or five ounces of serum ran from the cranial cavity. Brain substance seemed to be normal throughout. In the right fissure of Sylvius was embedded a tumor about one inch and a half in diameter, which was almost entirely concealed from view by the convolutions. It rested upon the convolutions of the island of Reil, completely disorganizing them. The inferior extremities of the ascending frontal and parietal convolutions were normal. The upper surface of the temporo-sphenoidal lobe was somewhat disorganized. The tumor apparently sprang from the pia mater.

Report of the Committee on Morbid Growths.—A section made from the tumor presented by Dr. Brubaker, and examined microscopically, showed that the growth was tubercular. Its histological structure is seen to consist of fibrous tissue constituting a reticulum, the meshes of which are filled with lymphoid cells. These appearances are very distinct at the peripheral zone of the tumor, while the centre and inner zone are in a state of retrograde metamorphosis, presenting a very granular appearance, scarcely stained by the carmine. The bloodvessels are mostly obliterated, their lumen being filled with coagulated blood or granular *débris*.

DR. W. H. PARRISH exhibited specimens of

ENLARGED LYMPHATIC GLANDS.

I show five lymphatic glands removed from the axilla of a patient whose breast I amputated about nine months ago. The case was then reported to the Obstetrical Society and was published in THE MEDICAL NEWS of July 8, 1882. The specimen was referred to a committee, and Dr. Beates made a microscopical examination, and concluded that the growth was an adenoma that had undergone carcinomatous change. Of the enlarged glands presented this evening, three about the size of an almond were removed from the axilla, a fourth of smaller size from just below the clavicle, and the fifth from the side of the neck about an inch from the clavicle. The patient presents no cachexia. The specimens were referred to the Committee on Morbid Growths.

Dr. Parrish also exhibited

POLYPI FROM THE UTERINE CERVIX.

I also present this evening two small growths, each about the size of the last phalanx of the thumb, removed to-day with a wire écraseur. On Christmas eve, I saw for the first time a patient of French birth, a teacher, apparently about 35 years old. When I entered her room she was in a state of syncope from hemorrhage from the genitals. The hemorrhage had, however, ceased. With the application of hot wet-cloths over the front of the chest, and by hypodermic injections of whiskey, and aromatic spirits of ammonia, she in a few minutes revived so as to be able to tell me that she had not menstruated for three months, when suddenly bleeding began from the womb, and continued during the day with an exacerbation just before sending for me. As the patient's condition was evidently a critical one, I asked the direct question, if she had not had, or was not having an abortion. She said it was impossible. I then learned that she was single and 42 years old. A digital examination showed an intact hymen, and a substance in the vagina that at first touch felt very like an embryo of about three months. But I soon recognized that it was a growth attached to the lower part of the cervical canal, and that there was another distending the cervical canal. The latter felt still more like an embryo or ovum, and, in fact, in the absence of the one in the vagina might have at first misled me into thinking that the patient was aborting. Slight traction on it soon showed that it was attached. There was no return of the bleeding, and to-day, with the assistance of Dr. M. O'Hara, I removed both the growths with the wire, and without etherization or the use of a speculum. A remarkable feature of the patient's history is that she had always menstruated scanty, and at intervals of five or six weeks. Never before had she evinced a tendency to uterine hemorrhage. I am confident that the patient was not pregnant. I presume that, being virginal, she is approaching the menopause.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, December 26, 1882.

THE PRESIDENT, T. M. MARKOE, M.D., IN THE CHAIR.

INTESTINAL OBSTRUCTION.

DR. WEIR presented a specimen which illustrated intestinal obstruction occurring in the splenic flexure of the colon. The cause of the constriction was cancer. It was removed from the body of a woman 33 years of age, married, who entered the New York Hospital November 28, 1882, in the medical service. She had had complete obstruction for nine days previously, associated during the last few days with stercoraceous vomiting. The history was that she had had, some time last spring, an attack of intestinal obstruction, but not very severe, and from that time had suffered from attacks of constipation. The cause of the last obstruction could not be readily elicited, nor was any light thrown upon the subject by examination of the distended abdomen. It was recognized that there was great distention of certain coils of intestine, apparently in the site of the colon, though this could not be posi-

tively made out. Examination with the rectal tube showed that the gut could be penetrated to the depth of twenty-eight inches; this was accomplished several times when large enemata were administered. These latter also established the fact that about one hundred ounces of water could be received each time into the bowel without unduly distressing the patient, when placed in the knee-elbow position. Prior to her admission to the hospital, which was on a Tuesday, she had received a great deal of treatment, the exact nature of which could not be determined. At the invitation of the visiting physician, Dr. Draper, Dr. Weir saw the case on Wednesday afternoon, at which time the patient had a temperature of 102° F., pulse 120. These symptoms, together with the stercoraceous vomiting, the duration of the case, and the history of constipation of marked severity, led him to the conclusion that delay should not be continued much longer, and he therefore proposed a preliminary rectal examination. It was determined, however, to repeat the injections, and to wait until the following morning, and if no relief was obtained, to then resort to surgical interference. Relief was obtained, the injections bringing away a certain amount of fecal material, and the discharge was followed by two additional fecal evacuations of a creamy, muddy color and consistence. The vomiting ceased, and the general condition of the patient was so much improved as to encourage postponement of the proposed surgical interference. On Friday the symptoms of obstruction again appeared, except the vomiting. The abdomen became more distended than it had formerly been, the temperature rose higher, and there were nausea and cessation of fecal discharge and flatus. On Saturday Dr. Weir again saw the patient, and it was then learned that her general condition had very much depreciated within the last two days. Dr. Weir then proposed that rectal examination be made, which was assented to, and he then introduced his hand (of 9¼ inches circumference) slowly into the bowel, but was unable to carry it up beyond the upper rectal pouch; though he could carry one finger sufficiently far to enable him to sweep over the cæcal region. This, however, could not be recognized. He had proposed to perform a right lumbar colotomy if it had been determined by rectal exploration that the cæcum was distended; or, if unable to determine this point, to perform enterotomy. The patient, however, was so much prostrated by the ether and examination as to forbid a resort to further surgical procedures. She did not rally, as was hoped, but gradually sank, and died twenty-four hours afterward.

The autopsy revealed cancerous disease of the splenic flexure of the colon, so slightly perceptible externally as scarcely to be recognized, There was also a most minute secondary involvement of the liver. No injury had been done to the rectum by the manual exploration. The point of obstruction was twenty-three inches from the anus. The cæcum was apparently in the normal position, and not distended with fluid, but with air. To this point Dr. Weir wished to direct the attention of the surgeons, because he had heretofore felt considerable confidence that in cases of obscure intestinal obstruction a rectal exploration might be available as a means of diagnosis, and, by the recognition of a distended cæcum, might enable the surgeon to act with greater accuracy. In this instance such exploration had failed. The experience of Dr. Halstead, also, who would follow him in the presentation of a specimen, had led to the conclusion, that when the cæcum was distended with air it might not always be readily recognized by the touch. Another point to which he would like to ask attention was the diagnostic value of injections of water, and of the rectal tube. Heretofore he had placed much reliance upon the rectal tube, especially when the French black tube was used, because this latter more readily showed on withdrawal any twisting or sharp bending that might have taken place. In two instances he had proved by operation or by autopsy, that the site of the obstructions had been quite accurately determined in this manner. He had found some difficulty in carrying the tube beyond the sigmoid flexure in the cadaver in four recent trials by Dr. Peabody, but in the living subject it could be quite easily introduced. This difficulty could be easily understood because of the difference in the condition of the parts. During life the intestines yielded to pressure more readily than in the rigid cadaver, and perhaps the end of the tube itself produced spasmodic contraction, and the gut consequently changed its position or that of the end of the tube. As to the injection of fluids, there was a fallacy in that means of diagnosis, because the opening in the large intestine might admit the passage of fluid beyond it. That error was committed in one instance where there was a narrowing of the transverse colon, in which case he had performed right lumbar colotomy. Prior to the operation large quantities could be injected, with but little return. In one trial of a large turpentine enema, the matters vomited were strongly impregnated with the odor of the injection, showing that the ileocolic valve had been forced. A final word might be added which would bear also on the case to be subsequently narrated. It was that the pathologist of the hospital had, in remarking on the difficulty that would have been encountered in recognizing the site of obstruction by a laparotomy, said that in six autopsies of intestinal obstruction he had lately made, he believed that in nearly every one from a similar cause, relief would not have resulted from an operation.

CASE OF INTESTINAL INCARCERATION.

DR. W. S. HALSTEAD presented a specimen with the following history: Anna B., æt. 35; Irish; widow; well nourished; mother of eight children (youngest five years old); was admitted to Charity Hospital, December 16, 1882, complaining of constipation, colicky pains, distention of abdomen, and vomiting. She states that she has, since her infancy, been subject to similar, but less severe attacks, and remembers five previous ones distinctly—the last having occurred in March of this year. Heretofore, has been promptly relieved by "medicine," her symptoms having persisted on only one occasion for as long a time as two days, and their subsidence being always coincident with the escape of much flatus. Constipation had attracted patient's attention for several days prior to present seizure, which developed suddenly, about one week before admission, while she was drinking a cup of tea. Since then, nothing has passed from her bowels. She vomited on the 15th, for the first time, a little mucus, and has continued to eject, at intervals of several hours, frothy mucus and possibly bile, but at no time stercoraceous matter. House physician gave a cathartic soon after admission. My attention was called to the case on the following day, December 19. The recorded history being incomplete, I will recite it as accurately as possible from memory: Found patient tossing from side to side, moaning loudly, and apparently in great distress. Countenance slightly flushed, but not anxious. Respiration 27; pulse 98; temperature 98.5°. Thighs flexed, abdomen much distended and unevenly so, everywhere tympanitic, and in no one region especially sensitive to pressure.

Diagnosis.—Intestinal obstruction. Prescribed morphine, hypodermically, and directed that enemata, as large as possible, should be administered with the longest available tubes.

December 18.—Patient confident that she is conva-

lescing, assures us that she is free from pain, and has passed "wind" per anum. Respiration 22; pulse 104; temperature 98.5°. Cannot ascertain positively how much urine has been voided, but the nurse guesses four ounces in twelve hours. House physician states that hard œsophageal tube was introduced last evening to its fullest extent (about twenty inches), and that only one quart of fluid could be injected, which, when evacuated, brought with it mucus, but no gas, and not a trace of feces. Repeated the injection myself, with like result, and noticed that the tube was in several places most singularly bent and twisted.

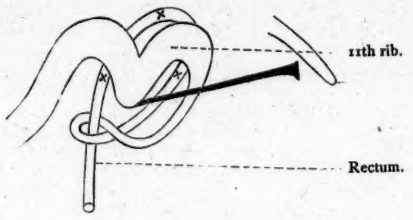
19th.—5 P. M. Pulse 120, and intermittent. 6 P. M. Patient anæsthetized. Assisted by Dr. Weir, proceeded to operate under carbolic acid spray (1–40). Incision in median line, from umbilicus to pubes. The peritoneum being divided, a small quantity of serous fluid escaped through the wound. The large intestine very much distended, and presenting a few small superficial ecchymoses, occupied the entire field of view, being folded upon itself longitudinally. The separation of the folds exposed the quite normal small intestine. After a somewhat prolonged and unsatisfactory search for the cause of the obstruction, which was evidently below the flexura linealis, there could be felt with the right hand a dense cylindrical band, about the size of one's little finger, very deeply situated, and stretching from near the promontory of the sacrum, obliquely upward and outward, to the parietes of the left hypochondrium, not far from the tip of the twelfth rib. The abdominal incision was then extended to within about two inches of the xiphoid cartilage. The obstructing cord being exposed, it could be seen to have its apparent origin from the transverse colon, and was divided between two stout catgut ligatures, which were passed around it by means of an aneurism needle. Below the band, and clearly compressed by it, were two tubes of large intestine, one of which filled with air as soon as released, while the other did not. The patient's condition was too bad to justify much further investigation, although it was evident that the disposition of the sigmoid flexure was most puzzling, and possibly offered another obstacle to the escape of intestinal contents. The distended colon, which had been protected throughout the operation by towels warmed in a solution of carbolic acid (1–40), was replaced without very much difficulty, and the wound united by a double row of sutures; the deep, of silver, included the peritoneum.

20th.—7 P.M. Patient has just died. Ever since the operation was observed by internes and nurses to have passed large quantities of gas from the bowels.

21st.—12 M. *Autopsy:* Quite firm union all along line of incision. Transverse colon slightly adherent to wound a little below umbilicus. Large intestine reached to fourth intercostal space on left side. Attached to the anterior surface of transverse colon at about its middle, and having its origin in the great omentum, was one portion of the divided bowel with its catgut ligature; the other part being intimately blended, and apparently continuous with the diaphragmatic peritoneum between the eleventh and twelfth ribs. The specimens before you show the attachments of the band.

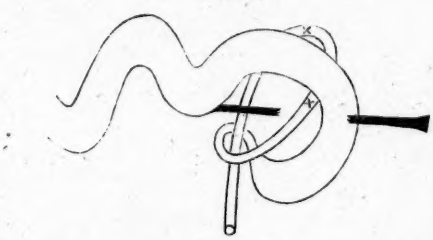
Figures 1 and 2, drawn in the light of the autopsy, are intended to illustrate what presumably existed before, and immediately after the operation. The xxx designate sigmoid flexure looped and twisted upon itself from right to left. The sigmoideo-rectal junction was sufficiently narrowed in the bight of the volvulus to prevent the ready escape of flatus per rectum. This constriction was evidently one of very long standing, and intensified somewhat by the underlying falciform fold of its mesocolon, which normally extends from the mesentery to the upper end of the rectum, and which, in this case, was unusually strong and prominent, with its concavity directed ventrally.

FIG. 1.



The *pathogenesis* may then have been: 1st. Non-inflammatory adhesion in intra- or early extra-uterine life of a considerable portion of large omentum (mesogastrium) to parietal peritoneum—adhesions of this nature being incidental to development, as urged by Sanger and verified by Soldt. 2d. Embarrassed growth of sigmoid flexure, giving rise to a rotation of same, which was permitted by the great length of the free

FIG. 2.



mesocolon at that early period, or by its coincident development. 3d. Narrowed sigmoideo-rectal junction; its growth having been somewhat restrained and its lumen reduced by pressure from without. 4th. Acute symptoms due, as suggested by Busch, to sudden distention of gut above and retraction of mucous membrane from below omental band, possibly preceded by further intrusion of descending colon under the site of constriction. I would suggest in similar cases the advisability of operating early, not only that the patient may survive the shock, but to anticipate a degree of hyperdistention of the intestine from which it can never recover. If there is reason to suspect the existence of a further source of obstruction, or if the tension within the distended gut cannot be decidedly relieved by simpler measures, I believe that laparocolostomy or enterostomy, as the conditions may dictate, to be indicated.

DR. SANDS remarked that, in Dr. Weir's case, the failure to recognize distention of the cæcum was probably due to the existence of a band at the upper part of the rectum, which prevented the hand of the operator from making the usual excursions. In one case he had been able easily to ascertain, by manual exploration of the rectum, a distended state of the cæcum, the patient having a stricture situated in the sigmoid flexure.

DR. WEIR remarked that he had heretofore regarded manual exploration of the rectum as a reliable means of determining whether or not the cæcum was distended.

DR. SANDS further remarked that in inserting the tube with the view of determining the presence of a stricture, it should be remembered that the constriction might be sufficiently close to cause abdominal ob-

struction, and yet not be so narrow as to prevent the passage of the tube. This condition was exemplified in a case he had already narrated to the Society, in which the ordinary black French tube was passed a distance of eighteen inches without encountering any obstruction. When the patient died a cancerous stricture of the rectum was found between six and seven inches from the anus, just large enough to allow the passage of the tube. Dr. Sands said that Simon had shown conclusively that it was impossible to pass an elastic tube beyond the splenic flexure of the colon, and that in cases where a great length of tube has been introduced the end of the tube had been arrested at the splenic flexure, the mesocolon allowing the tube to curve toward the right side.

DR. WEIR asked Dr. Sands concerning the value of exploration by means of the tube in any portion of the large intestine below the splenic flexure. He himself had already attached considerable value to such exploration if properly and repeatedly performed.

Dr. SANDS regarded such exploration as very valuable.

DR. GERSTER had observed a case somewhat similar to the one related by Dr. Halstead. In his case, however, he was able to detect at the operation the site of the obstruction. The patient was a boy, thirteen years of age, who had suffered from peritonitis eight weeks previous to his last sickness. The peritonitis had subsided under the ordinary plan of treatment, and the patient had recovered to such an extent as to be able to go to school. Two weeks afterward he was attacked by something which appeared like peritonitis. Morphine was administered, and he seemed to improve under the treatment so far as to permit the physician to attempt to evacuate the bowels by means of an enema. From the moment the enema was administered, very violent and alarming symptoms of intestinal obstruction developed. The chief reason why the effort was made to evacuate the bowels was the complaint of fulness of the abdomen, and entire absence of pain upon pressure. The symptoms which developed after the administration of the enema were intense vomiting and depression of the general system, with severe pain. The attending physician proposed to administer quicksilver to overcome the intestinal obstruction. A second physician was called, who found marked depression of the general system, feeble pulse, continued vomiting, and clammy perspiration despite the narcosis which had been produced by morphine; marked tympanitis also existed. The child, when aroused from his semi-comatose condition, always pointed to the left side of the belly as the seat of the pain. Dr. Gerster saw the patient in consultation, and proceeded to surgical interference for his relief. He made an incision which extended from the umbilicus almost to the symphysis pubis. Immediately upon opening the abdominal cavity the distended bowels rushed out through the incision, and filled it so full that it was impossible to form any adequate idea with reference to the position or condition of the abdominal contents. He extended the incision sufficiently far to admit of a full view of the abdominal contents, and then introduced his hand and felt most of the intestines to be movable, except one bunch consisting of four or five loops, which were anchored in the right iliac fossæ. Separating the loops of intestines constituting this bunch, he found they were bound down by a band one-fourth of an inch in width, which passed across one loop of the mass and formed the true cause of obstruction. Upon closer examination it was also ascertained that this apparent band was the vermiform appendix, which had evidently become attached to the abdominal wall during the previous attack of peritonitis. It had passed across a portion of the ileum about five inches from the cæcum, and its apex had become attached to the mesentery of the ileum upon the other side. The upper portions of the ileum and small intestine were intensely distended and hyperæmic, and the lower portion was pale and normal, as was also the large intestine. There was no evidence of acute peritonitis at the time of the operation. He applied a stout double catgut ligature to the band, or vermiform appendix, and divided it between the ligatures, whereupon the intestinal contents immediately rushed from the superior to the inferior portion of the ileum. Dr. Gerster then experienced great difficulty in attempting to replace the intestines within the abdominal cavity. Hoping to diminish their distended condition, he introduced the smallest size hypodermic needle, but the escape of gas was so slow that he withdrew the needle, intending to perform a large number of punctures, but when the needle was withdrawn, he noticed that one minute drop of intestinal contents followed, and appeared upon the external surface of the gut. He wiped the surface of the gut very carefully, and then introduced an elastic catheter into the bowel through the anus and administered an enema; his idea being that, the obstruction being removed, probably a portion of the intestinal contents could be removed in that way. The plan proved to be perfectly successful. The injection of hot water through the catheter brought away feces, and a large quantity of gas also escaped, followed by solid fecal masses. After the evacuation had occurred, the intestines collapsed so much that no serious difficulty was experienced in restoring them to the abdominal cavity, and the wound was closed. The abdominal cavity was not exposed longer than twenty-five minutes, but the patient died of collapse about eleven hours after the operation.

DR. HALSTEAD remarked that he also introduced a fine hypodermic needle into the distended intestines in his case, and observed precisely the same thing which Dr. Gerster had mentioned, namely, the exit of a small drop of intestinal fluid upon the withdrawal of the needle. Only a small amount of gas escaped, and that very slowly. Furthermore, Dr. Weir retained the intestines in position to a considerable extent by means of towels which had been dipped in warm, carbolized water, and after some manipulation they were returned to the abdominal cavity.

ENCYSTED NEEDLE IN THE LEG.

DR. POST presented a portion of a large needle enclosed in a cyst, which he had removed from a woman's leg about a hand's breadth above the internal malleolus. The patient was forty-five years of age, and gave the history that the portion of needle had been in this position during the last twenty-five years. The point of special interest in the specimen was that the needle was firmly encysted, the cyst, as exhibited in the specimen, almost completely surrounding it. At first it caused but slight irritation, and subsequently gave the patient no trouble whatever until a short time before she applied to him for relief. The needle was a large one, and the portion removed was two centimetres in length.

WEST PHILADELPHIA MEDICAL SOCIETY.

Stated Meeting, Monday, January 8, 1883.

S. S. STRYKER, M.D., PRESIDENT, IN THE CHAIR.

DR. R. M. MCCLELLAN read a short paper, entitled

NOTES ON THE NOVEMBER EPIDEMIC OF DIPHTHERIA.

The discussion was opened by a question from the PRESIDENT as to the experience of the members of the

Society in the treatment of diphtheria with large doses of calomel.

DR. BARTLESON said he had, in several cases, used twenty-grain doses every three hours, till two drachms had been taken. One of these was a case of membranous croup in a child seven years old. The child did not recover. Another was a child five years old, who got well.

DR. DULLES said he had first used calomel in large doses in the treatment of diphtheria last October. Soon after reading a strong recommendation of this method, he was called to an infant of six months, whose throat was full of membrane, so that it was hardly able to breathe, and could not nurse. He ordered five grains of calomel, to be given hourly, and in the intermediate half-hours, so as not to make black wash of the calomel, a teaspoonful of lime-water. After ten doses had been given, he saw the baby again, and to his great surprise found it very much better. The next day, he put his little patient upon sulphate of cinchonidia, and in a few days more she was entirely out of danger. After this, he had three more cases in the same row of houses, and all but one were treated similarly—the exception was an adult who had a very light attack. These did as well as the first case. In the case of the infant first mentioned, the calomel did not produce any purging; in the others it brought on three or four characteristic stools. With his limited experience, and with what was already on record, he was inclined to use again this method.

DR. J. H. MUSSER said that his own experience in the recent epidemic was that the cases were of a mild type, so that they got well almost without treatment. He used stimulants and spray of carbolic acid and lime-water. He had one case, however, which was of a different character. In this, a child, when first seen, had a sore throat like that of scarlet fever, with other symptoms of this disease, and, on the second day, a characteristic rash. Two days later, a diphtheritic membrane began to form in the fauces, and extended down into the larynx, and up into the nares. Apparently, this was a case of scarlatina, followed by diphtheria; or did the scarlatinal condition predispose to the infection with diphtheria? or were the two diseases developing at the same time? He had another case where all the pharyngeal symptoms of diphtheria were present, but in two days a scarlatinal eruption appeared, and the child died with the coma of scarlatina. As to the question of a distinction between diphtheria and membranous croup, he thought they were apt to be associated in the same epidemic, or one would follow the other. In all cases of membranous croup which he had seen, he could trace a connection with diphtheria, and therefore he thought membranous croup to be but a laryngeal diphtheria. Then, again, death is almost sure to take place from stenosis of the larynx before a septicæmia develops, and hence before the contagious period of the disease has arrived, thereby preventing the infection of other members of a family.

DR. M. B. MUSSER said, in reference to the relation between diphtheria and membranous croup, that he had never seen two cases of membranous croup in the same family at the same time; while in diphtheria, where one case occurs there are usually others similarly affected, or, at least, they have sympathetic sore throat. In regard to treatment, he had some time ago seen a case in which Dr. Meigs, whom he had called in consultation, suggested the use of the hyposulphite of calcium. Other remedies had been used without apparent success, but when this was tried, a most decided improvement took place within twenty-four or forty-eight hours. Since then he has had equally good results from its use. He uses, in nearly all cases, quinine by suppositories, and the tincture of the chloride of iron and chlorate of potash, together with stimulants. Locally he applies the persulphate of iron, dissolved in an equal quantity of glycerine.

DR. BARTLESON said that he used boracic acid in a solution of two drachms in half an ounce of glycerine and half an ounce of water. After its employment he has seen the membrane melt away. For internal treatment he uses iron and potash, adding hydrochloric acid, so as to give the mixture a little free chlorine.

DR. MULLEN had seen ten cases of diphtheria in one family; five were severe, and five were not. As a diagnostic point, he called attention to a peculiar and very offensive odor about the breath and flatus. In treatment he uses locally lime water, the vapor of slaking lime, and insufflations of sulphur, together with a general tonic and stimulant course. He has seen dropsy follow diphtheria as well as scarlatina.

DR. ROCKWELL thought there was a difference between membranous croup and diphtheria. In the former he had seen patients die very soon of asphyxia without adynamia. In diphtheria he had seen admirable results from the local application of lime-water by means of the atomizer.

DR. STRYKER inquired whether, in the sore throat of scarlet fever, there was any destruction of tissue with the formation of membrane.

DR. J. H. MUSSER replied that in such cases there was often sloughy tissue, which, however, was different in appearance from the membrane of diphtheria. He thought there were cases where diphtheria existed as a complication of scarlatina.

DR. ANDERSON said he had had, last year, a case of this sort. A child had had scarlet fever, and diphtheria followed. A week or so later, a brother of this child had apparently scarlet fever, with characteristic rash, and no membrane in the throat. But three or four days later a diphtheritic membrane formed, with high continued fever, which, after convalescence, was followed by most persistent paralysis. He inquired whether paralysis was more apt to follow mild or severe attacks of diphtheria?

DR. J. H. MUSSER inquired of Dr. Dulles whether the occurrence of the rash in diphtheria had any analogy to the occurrence of a scarlatinal rash after surgical operations.

DR. DULLES said that after surgical operations there is not infrequently a scarlatinal eruption, which is usually mild, and in regard to the etiology of which nothing is certainly known. It is probably a coincidence, and yet may be hastened in its development by the operation. A similar rash is observed in the diphtheria of puerperal women, which may also be considered analogous. But the frequent occurrence of rash, like that of scarlatina, with well-pronounced diphtheria, and of a sore throat, like that of diphtheria in unmistakable cases of scarlet fever, suggests something more than coincidence. It suggests a relationship between these two diseases, which is all the more probable when we consider how generally they are associated as epidemics.

CORRESPONDENCE.

OVARIOTOMY STATISTICS.

To the Editor of THE MEDICAL NEWS:

DEAR SIR: Last summer I wrote to Mr. Knowsley Thornton, of London, begging him to be so kind as to furnish me with an account of the latest statistics of ovariotomy in Great Britain, including his own, for the new edition of my *Surgery*. When his communication reached me, it was too late for me to avail myself

of his kindness, and I therefore wrote to him at once, asking permission to publish the statistics in THE MEDICAL NEWS, to which he promptly consented. As showing the latest triumphs of ovariotomy, these figures cannot fail to be of deep interest to the ovariotomists of this country. Mr. Thornton has great reason to be satisfied with his own results, reflecting, as they do, great credit upon his methods and operative skill.

I am, very truly, yours,

S. D. GROSS.

ELEVENTH AND WALNUT STREETS, January 17, 1883.

22 PORTMAN STREET, LONDON W., November 30, 1882.

DEAR DR. GROSS: I fear you will think I have forgotten my promise. At last I send you the statistics. I have found it very difficult to get them. I can get nothing later as to Clay's and Dr. Keith's, only up to October, 1881. The others are almost to date.

	Cases.	Recovered.	Died.	Mortality per cent.
Dr. Clay,[1] of Manchester,	93	64	29	31.11
Mr. Spencer Wells,[2] .	1088	847	241	22.15
Dr. Keith,[3] . . .	381	340	41	10.76
Mr. Knowsley Thornton,[4]	328	293	35	10.67
Mr. Lawson Tait,[5] . .	226	199	27	11.94

Dr. Peaslee (page 276) credits Mr. Clay with two hundred and fifty cases; recovered, 182; died, 68; mortality, 27.2. I have not been able to verify these results, and therefore have not given them in the above table. The discussion in the *British Medical Journal*, in 1880, failed to elicit any statement from Clay himself *as to results*. He then said that he had performed four hundred before he ceased to operate. I think, under any circumstances, his results should hardly be given in comparison with those of Wells, Keith, Tait, and myself, as ours are thoroughly authenticated by published tables; Clay's never have been.

I think my own mortality answers your question as to the value of the spray. I did not know until I began to look up the matter for you that I actually have got slightly the lead.

Trusting that, though late, the figures may be of some use to you, believe me, with much esteem,

Very truly yours,

J. KNOWSLEY THORNTON.

DR. GROSS, PHILADELPHIA.

THE EARTH DRESSING.

To the Editor of THE MEDICAL NEWS.

SIR: The editorial article in your issue of December 30th, "Earth Dressing in Germany" gives an incorrect notion of the material used in dressing wounds at Prof. Esmarch's clinic, and I beg to be permitted to call attention to it. The writer describes the material as "earth," and "earth-mould," and claims for Dr. Addinell Hewson the credit of having introduced it as a surgical dressing. But it is quite a different thing. Dr. Hewson used "the yellow subsoil" "from deep diggings" (to quote from his monograph) after drying and sifting it; whereas the dressing introduced by Neuber into Esmarch's practice is the ordinary peat ("Torf"), which is generally used for fuel in North Germany. After being dried it is ground up into a coarse granular and fibrous mass, which is enclosed in bags of gauze, and sprinkled with some antiseptic solution (5 per cent. carbolic acid, or corrosive sublimate 1 to 1,000), or mixed with 2½ per cent. of iodoform, and applied to wounds by means of "crinoline" bandages.

I had the opportunity in May, last, of observing the application of this dressing and its gratifying results at Esmarch's clinic; and have, since July, employed it frequently at the New York, St. Luke's, and Chambers Street Hospitals in this city. It has proven the most satisfactory and cheapest form of antiseptic dressing that I have tried; and in six years I have used the carbolized gauze and jute, the salicylated and borated cotton and "antiseptic irrigation."

The peat may be obtained from Mr. J. Neuber, P. O. box 1410, New York City. Two hundred kilogrammes cost, delivered here, about $25. This quantity fills a case a little larger than the average dry-goods box, and will be sufficient for an active surgical service of fifty beds for the period of three or four months.

Respectfully yours,

WILLIAM T. BULL, M.D.

2 EAST THIRTY-THIRD STREET, NEW YORK, January 15, 1882.

[1] Mr. John Clay's translation of Kiwisch's Clinical Lectures, 1860.

[2] Tables in book and personal communication to me on November 29, 1882.

[3] Letter to Mr. Wells, October 17, 1881.

[4] My own are down to date.

[5] Paper published in Birmingham Medical Review and British Medical Journal. Total number of operations down to August 5, 1882.

NEWS ITEMS.

BROOKLYN.

(From our Special Correspondent.)

THE MEDICAL SOCIETY OF KINGS COUNTY held its sixty-second annual meeting on the 16th inst., and the following were elected as officers of the Society for the ensuing year: *President*, G. G. Hopkins, M.D.; *Vice-President*, F. H. Colton, M.D.; *Secretary*, R. M. Wyckoff, M.D.; *Treasurer*, J. R. Vanderveer, M.D.; *Librarian*, T. R. French, M.D.; *Censors*, Drs. A. Hutchins, C. Jewett, J. S. Wight, B. F. Westbrook, and G. R. Fowler. Two *delegates* to the State Medical Society, Drs. E. N. Chapman and L. S. Pilcher.

A lively discussion arose over a resolution offered by Dr. Skene, rescinding the vote of the November meeting, instructing the delegates of this Society to the American Medical Association and to the State Society to vote against the so-called "new" Code. This resolution was carried, under a call for the yeas and nays, by a vote of 49 against 26. This action leaves the delegates uninstructed upon the Code question, but does not affect the vote formerly taken expressing the Society's sentiment of opposition to the new Code.

THE STAFF OF THE KINGS COUNTY HOSPITAL has been somewhat unsettled lately. The Commissioners of Charities made some appointments, December 23, to the consulting staff and then constituted that staff a visiting staff. On January 20, however, the matter was reconsidered on the request of members of the old consulting staff, and it was ordered that the former status should be restored.

BUFFALO.

(From our Special Correspondent.)

THE ERIE COUNTY (N. Y.) MEDICAL SOCIETY AND THE NEW YORK CODE.—At the annual meeting of the Erie County Medical Society, held on the 8th inst., the following resolution was adopted:

"*Resolved*, That the Erie County Medical Society disapproves the action of the State Medical Society, at its last meeting, in adopting the report of the special committee revising the Code of Medical Ethics."

CHICAGO.

(From our Special Correspondent.)

COUNTY HOSPITAL.—Chicago is having much trouble with its great public hospital, the Cook County Hospital. The Board of County Commissioners, under whose control it is placed by law, has been in more or less of a turmoil for many months among themselves regarding its management. Meanwhile the county is spending nearly or quite a quarter of a million dollars in erecting two additional brick pavilions and a central executive building, which will be ready for occupancy some time next summer.

The troubles of the hospital have not, however, been confined wholly to the secular management, for within two years there have been three successive medical boards. As soon as a member of the medical staff has any difficulty with the management, and the fact reaches the official ears of the Board of Commissioners, the remedy for the difficulty—the Board seems to practise a specialty in the use of a single remedy—appears to be to turn out the whole corps of doctors, and the remedy is promptly administered. Such frequent changes are a little disturbing to the regularity of clinics, and somewhat to their efficiency, although it is always found that the staff are ready and glad to give clinical instruction to students.

For the outlook for medical teaching at this point there is satisfaction in the fact that the county hospital is increasing in importance, and in the number of cases treated every year, and the further fact that there are now so many medical colleges near it that it must be largely used in the years to come as a centre for clinical instruction. It now has nearly four hundred patients constantly; this number cannot be expected to decrease so long as the present rapid growth of the city continues. This growth is now about thirty thousand annually. The municipal census of 1882 (required by law to be taken every two years) showed a population of sixty thousand six hundred over the government census of 1880.

The County Hospital occupies a large block of land—over twelve acres. There are four medical colleges so near the hospital grounds that they are simply separated from it by a street—they "surround" it. Three belong to the regular profession, and two of them are for the education of men—the "Rush" and "Physicians and Surgeons'." One, the "Woman's," is for the education of women exclusively. The fourth school belongs to the persuasion of minute pellets.

MONTREAL.

(From our Special Correspondent.)

MCGILL COLLEGE.—The students of the first and second years have petitioned the Faculty and Board of Governors for the removal of Dr. Wright, the Professor of Materia Medica, on the plea that his lectures are diffuse and unpractical. They resolved to absent themselves from his lectures after Christmas, but a compromise has been made, and the trouble temporarily arranged for the session.

PARASITES IN CANADIAN PORK.—Mr. A. W. Clement examined at the city abattoirs one thousand hogs, and found four trichinous, seventy-six "measley," and thirty-seven with echinococci. The proportion infested with trichinæ is considerably smaller than in American hogs, as shown by the Chicago and Boston examinations. Trichinosis is a very rare disease in Canada; only twelve cases have been recognized, three in Hamilton, Ont., in 1868, and nine in Montreal, in 1870. Four post-mortem and dissecting-room cases have been recorded.

THE HEALTH OF MASSACHUSETTS.—The annual report of the State Board of Health, Lunacy, and Charity, has just been submitted to the Legislature. The report states that Massachusetts is more exposed to smallpox than any other State, and that in 1881–82 the disease appeared in about thirty cities; but the deaths from this disease in 1882 were less than in Chicago in one week. The year 1882 was one of average health, and no disease can be said to have prevailed excessively. Malarial fever has not appeared in so many of the towns east of the Connecticut as in the previous years, but in the western part of the State it seems to have been more prevalent than ever. The number of i n people in the State is at least 5,100, a net increase of about 200. During the year 52,416 immigrants arrived in the State by sea. Probably 30,000 of these remained in the State, and as many more came from other quarters.

GUITEAU'S REMAINS.—The Rev. Dr. Hicks, the spiritual adviser of Guiteau, has executed a legal instrument transferring to Surgeon-General C. H. Crane, U. S. A., all his right and title to Guiteau's body. The paper recites the clause of the will by which Guiteau bequeathed his body to Dr. Hicks, and it bears evidence of acknowledgment before a Justice of the Peace. In reply to inquiries Surgeon-General Crane said he was unable at present to give any information with regard to the final disposition of the assassin's remains.

FIRE IN AN INSANE ASYLUM.—A fire in the Kings County Hospital for Incurable Insane, in Flatbush, L. I., endangered the lives of fifty lunatics on Thursday morning of last week. A night nurse while making his rounds at 5 A.M., found smoke pouring from the sitting-room on the second floor into the hall. He gave the alarm, summoning Medical Superintendent Woodside and six nurses. Half of them set at work to put out the fire and the others to remove the insane patients in the ward. An alarm was also sent to the Flatbush Fire Department. The hose in the building was put to use, and, there being plenty of water, the fire was speedily subdued, and the firemen were not needed before their arrival. Much difficulty was experienced in getting the patients out of their rooms to a place of safety. Many had to be carried out in the arms of the nurses. The fire is believed to have been caused by the accumulation of refuse around the radiator used to heat the room where it broke out.

HONORS TO PROF. VON PETTENKOFER.—PROF. VON PETTENKOFER has received from the King of Bavaria, a patent of hereditary nobility in recognition of his invaluable contributions to the science of hygiene.

DR. H. B. SANDS, of New York, was elected a corresponding member of the Société de Chirurgie, of Paris, at its annual meeting on the 8th instant.

AUTOPSY OF GAMBETTA.—The post-mortem examination revealed a contraction of the ileo-cæcal valve, the result of an old inflammation of the bowel and extensive purulent infiltration around the cæcum and ascending colon, with traces of recent peritonitis, thus confirming the ante-mortem diagnosis of perityphlitis and pericolitis. Under the circumstances a surgical operation would have been unavailing.

LONG ISLAND COLLEGE HOSPITAL.—The opening exercises of the twenty-fourth session of the Long Island College Hospital took place last Tuesday evening. The annual address was delivered by Health

Commissioner Raymond. At the close of the exercises a crayon portrait, handsomely framed, of Dr. S. G. Armor, Dean of the Faculty, was presented to Dr. Armor, in behalf of the students, by Mr. J. W. Whitney, of the senior class.

COMPLIMENT TO DR. JAMES E. REEVES, OF WHEELING, W. VA.—At a meeting of the West Virginia State Board of Health, held on the 13th inst., the following preamble and resolutions were adopted:

"*Whereas*, This Board has received many very high compliments from distinguished sources for the manner in which it has performed its difficult labors—notably, for its efforts to elevate the standard of medical education in West Virginia; and,

"*Whereas*, It is always just and proper to acknowledge credit to whom credit is due; therefore,

"*Resolved*, That this Board is fully sensible of the eminent services of its secretary, Dr. James E. Reeves, to whom belongs, in the main, the credit of directing its successful labors, and in all things upholding its good name, by his faithful energies and labors alike for the State and the medical profession."

The Board also adopted, unanimously, resolutions urging upon Congress the importance of continuing and furthering the work of the National Board of Health.

MEDICAL EDUCATION IN PHILADELPHIA.—*The Continent* for January 17, 1883, contains an interesting historical sketch of the progress of medical education in Philadelphia.

FLORIDA AS A HEALTH RESORT.—DR. R. J. LEVIS contributes an article to the current number of *The Continent*, on the Gulf Coast of Florida, in which he points out its advantages as a health resort, particularly for subjects of pulmonary disease.

DR. DUHRING'S WORK ON DISEASES OF THE SKIN.—A very laudatory review of the French translation of Dr. Duhring's treatise on diseases of the skin has just appeared in the *Annales de Dermatologie et de Syphilographie* for December 25, 1882.

PREVENTIVE VACCINATION IN CHARBON.—At the meeting of the French Academy of Sciences held Dec. 18, 1882, M. PASTEUR read a paper giving the results accomplished during the past year in the department of the Eure-et-Loir by the farmers who have practically applied his method of inoculating live stock as a preventive of disease. The number of sheep vaccinated within the year has been 79,392. For the last ten years the average annual loss from liver-rot has been 7,327, or 9.41 per cent. Since the introduction of vaccination this loss has been reduced to 518, or 0.65 per cent. Among the flocks which have been only partially vaccinated, there were 2,308 sheep vaccinated and 1,659 not, and the loss among these was only eight for the 2,308 vaccinated sheep, or 0.4 per cent., while it was sixty among the 1,659 unvaccinated sheep—3.9 per cent. It is worthy of note that these sheep were brought from different parts of the department, and that the vaccinated and unvaccinated ones were all fed and treated in the same way, and subjected to absolutely identical influences. The veterinarians of the Eure-et-Loir have vaccinated during the year 4,562 head of cattle, and there have been only eleven deaths, the rate of mortality being thus reduced from 7.03 per cent., at which it stood a year ago, to 0.24 per cent. Horses were not vaccinated to so general an extent as cattle and sheep, on account of the swellings which follow vaccination in these animals; but of the 524 so treated only three died. M. Pasteur emphasizes the importance of these results, and adds that in the last six weeks 13,000 sheep, 3,500 cattle, and 20 horses have been vaccinated, without a single accident having occurred in these 16,520 animals.—*Gaz. Méd. de Paris*, Dec. 30, 1882.

ADULTERATION OF QUININE IN PARIS.—M. LABORDE stated, at the Société de Biologie (*Gaz. des Hôp.*, December 19th), that the quinine used in the Paris hospitals contains sometimes as much as forty-three per cent. of cinchonine, and that the two substances differ much in their actions. He has proved this by experiments of injecting both substances hypodermically in guinea-pigs, when death is produced much more rapidly by the adulterated than by pure quinine. Some *pharmaciens*, he observes, under the mistaken idea that the action of both substances is alike, substitute, either partly or wholly, cinchonine for quinine. This is very important to be known, especially in typhoid fever, which predisposes to some of the accidents resembling those produced experimentally by cinchonine.—*Med. Times and Gaz.*, Dec. 30, 1882.

PROCEEDINGS OF THE ILLINOIS STATE BOARD OF HEALTH.—The annual meeting of the Illinois State Board of Health was held January 11, 1883. Dr. Rauch presented the quarterly report of the secretary, from which we make the following extracts:

Smallpox.—With the advent of cold weather a few scattering cases of smallpox have appeared in the State, but without creating excitement or manifesting any tendency to become epidemic. At three points in Cook County, and in Aurora, Kane County, the infection is attributed to Chicago. At Marshall, in Clark County, the disease was brought from Cincinnati, and at Cambridge, in Henry County, it was brought from Pennsylvania. So far as the history of these cases has been ascertained, it is found that the victims were, in every instance, either unvaccinated or not vaccinated since infancy or childhood.

There have been no cases among immigrants during the quarter—none, in fact, since the single case in the early part of June last, soon after the sanitary inspection of immigrants was begun. Strenuous efforts have been made to secure the continuance of these inspections, or, at least, their prompt resumption at the opening of the immigrant season. The secretary thinks it is demonstrated—from the history of smallpox in Chicago during the past thirty-two years; from the consensus of statements of leading health officials concerning the origin and spread of the recent epidemic; and from the results of the operations of the Immigrant-inspection Service—

1. That the immigrant is a prime factor in the origin and continuance of smallpox in the United States.

2. That State and local boards of health, acting independently, cannot suppress the disease, when once introduced, so long as the influx of unprotected immigrants continues.

3. That the immigrant-inspection system, in addition to furnishing a practical mode of coöperation by the various State and local boards of health, has proved entirely adequate to remedying the defects arising from want of international quarantine laws and of uniformity in the administration of our own maritime and boundary quarantines.

Immigrant-inspection Service.—My final report to the Secretary of the National Board of Health, in which are summarized the operations of the Service in the Western district during the season, shows that a total of 115,057 immigrants were inspected in the district during June 1 and December 31, 1882. Of this number, 57,302 were found to have been satisfactorily vaccinated before sailing or during the voyage, and 3,127

were found to have had smallpox—making about 53 per cent. of the total number protected. There were 28,408 of the remainder vaccinated or revaccinated after arrival and before reaching this district; and 21,618 similarly treated by the Western inspectors, leaving 4,602 unaccounted for, including those whom it was deemed inadvisable to vaccinate.

At the close of August, I made a table of the results obtained up to that time. There had then been an aggregate of 63,962 persons inspected, of whom it was found that 54 per cent. were imperfectly or entirely unprotected against smallpox on arrival, and that only 22 per cent. were vaccinated on shipboard. These figures have been changed by the pressure and influence of the Inspection Service upon the steamship companies and their surgeons, so that, for the whole season, the percentage of "susceptible" was reduced to 47, while the proportion of ship-vaccinations was increased to 29, in the hundred.

This latter figure (29 per cent.) represents an actual increase of fully 42,000 vaccinations secured on shipboard by this means, during the latter, as compared with the first half of the season; and indicates the increasing value, efficiency, and influence of the Service, both directly and indirectly, at the time when its operations were suspended.

Prior to the preliminary steps taken to secure this Service (including the notification of Dr. Smith, Health Officer of the port of New York, to the steamship companies last spring), vaccinations on shipboard—except in rare instances—were confined to the occasions of the actual appearance of smallpox cases on board. So that, as a matter of fact, an aggregate of about 174,000 vaccinations on shipboard have been obtained among the arrivals at all ports, simply as a result of the existence of the Service, and independently of those performed by the inspectors after arrival.

Medical Education.—The exposure of the Boston Bellevue Medical College, and its consequent disruption, of which the members have already been advised, have been followed by some unlooked-for developments. As a result of the correspondence carried on from this office, the most convincing proof was secured that the so-called "college" sold diplomas and degrees to individuals grossly ignorant of any medical knowledge, and either with or without attendance upon its alleged course of instruction. Its officers were arrested for using the United States mails for fraudulent purposes, and, on trial, admitted all that was charged against them, except violation of the postal laws. To this charge they pleaded that they were legally incorporated, and were empowered by the laws of Massachusetts to issue diplomas and confer degrees without any restriction as to course of study or professional attainments. The United States Commissioner held the plea to be valid, and dismissed the case with the following remarks:

"The State has authorized this college to issue degrees, and it has been done according to legal right. . . . The law makes the faculty of the college the sole judges of eligibility of applicants for diplomas. There is no legal restriction, no legal requirement. *If the faculty choose to issue degrees to incompetent persons, the laws of Massachusetts authorize it.* This is, therefore, not a scheme to defraud under the statute. The defendants are dismissed."

Since this decision was rendered, that is, within a fortnight, the "American University of Boston," president, Dr. Buchanan (familiar name in this connection), and the "First Medical College of the American Health Society," located at Boston, have been incorporated, and Dr. Alfred Booth, the first president and one of the incorporators of the "Boston Bellevue," has given notice of his intention to start the "Excelsior Medical College."

Thirty-one individuals have been detected in falsely swearing to be graduates of foreign universities, their pretensions exposed, and the impostors driven from the State through the Act to Regulate the Practice of Medicine.

School Vaccination.—The school population of Illinois is now quite well protected against smallpox.

National Board of Health.—The following preamble and resolution were unanimously adopted:

Whereas, The Act of Congress, appoved June 2, 1879, by which the National Board of Health is charged with the duty of coöperating with and aiding State and local boards of health in the enforcement of their rules and regulations to prevent the introduction of contagious and infectious diseases into the United States, and into one State from another, will expire by limitation on the 1st of June, proximo; and

Whereas, The said National Board of Health has discharged this duty with so much of success, honesty of purpose and regard to economy, as to conclusively demonstrate the value of a national agency for the protection of the public health; therefore, be it

Resolved, That the Illinois State Board of Health earnestly urges upon the Senators and Representatives from this State to obtain, during the present session, the legislation necessary to secure an extension of said act, pending the creation of a permanent national health organization—such legislation to include a provision whereby the unexpended balances of the original appropriations may be reappropriated and made immediately available for the purposes of said Act.

HEALTH IN MICHIGAN.—Reports to the State Board of Health, for the week ending January 13, 1883, indicate that diphtheria, neuralgia, rheumatism, and scarlet fever have increased, and that consumption has considerably decreased in area of prevalence.

Including reports by regular observers and by others, diphtheria was reported present during the week ending January 13, and since, at 21 places, scarlet fever at 17 places, and measles at 14 places. Smallpox was reported at Detroit, January 13.

OBITUARY RECORD.—In New York, on the 23d inst., GEORGE M. BEARD, M.D., aged 43 years. Dr. Beard was born in Montville, Conn.; he received his classical education at Yale, and graduated in medicine at the College of Physicians and Surgeons, New York, in 1866. He was one of the originators of the National Association for the Protection of the Insane and the Prevention of Insanity, and was a frequent contributor to the literature of the diseases of the mind and nervous system. His death is said to have been due to pneumonia. He leaves a wife and daughter.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 15 TO JANUARY 22, 1883.

SPENCER, WILLIAM G., *Captain and Assistant Surgeon.*—The leave of absence on surgeon's certificate of disability, granted September 20, 1882, is extended three months on surgeon's certificate of disability.—*Par. 4, S. O. 16, A. G. O., Jan.* 19, 1883.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*